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Issue 61 April/May

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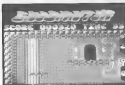
# BRAND NEW XL/XE SOFTWARE FROM PAGE 6

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PAGE 6 is proud to be able to bring you three new superb new releases for the XL/XE. There are still a number of programs being released for the XL/XE but we have always been extremely selective so you can be sure that new programs from PAGE 6 are of the highest standard. ENIGMATIX is the first major program from a British programmer for some time and we are proud to make it available.

To order these products use the order form enclosed with this issue or telephone your order to us on 0765 213559. We accept Visa, MasterCard and Scratch.

## A BRAND NEW XL/XE ROM CARTRIDGE! EXCLUSIVE TO PAGE 6!

### HYPNOTIC LAND

You follow it or not, we have laid down a brand new ROM CARTRIDGE for the XL/XE from Lizardsoft in Italy who have produced this in conjunction with Atari Italy.

**HYPNOTIC LAND** is a version of the addictive ST 800 KILAB - a highly addictive, highly entertaining game that will challenge you to complete the first few levels and have you coming back for more... again and again!

The aim in **HYPNOTIC LAND** is to collect miscral elements in the form of coloured balls into the corresponding coloured cup at the end of a ramp. To do this you must place arrows on the ramp to redirect a ball into an adjacent column. Remember to only put green balls into the green cup and so on. It seems easy but once you have mastered the first level, some despicable monsters start to appear to try and steal the balls. You can shoot them with the joystick but don't forget you also have to keep one eye on the ramp! Sometimes special shining orbiballs will appear which can go in any cup and give bonus points.

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Like all the great classics, a simple concept that has provided the foundation for a stunning and addictive computer game.

**HYPNOTIC LAND** is on ROM CARTRIDGE and will run on all XL/XE machines  
**A BRAND NEW ROM for £12.95**





## ATARI

Issue 61  
April/May 1985

The Magazine for  
the Dedicated Atari User!

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## THE CREDITS

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**San Hingham** did all the cover work in preparation for this issue. He also handled the printing in the form of computerized Atari covers, plus many bits of good advice and graphics in this issue and in the past. He did not see the Atari 8 in the single column. He is 27.

**Scotty** looked after the printer's orders and a series of other things in the office including typing, the address and new subscriptions, plus many other things. He was usually in the office until 10:00 a.m. in order to take care of the printer's orders. He is 27 and is a resident in the present.

**Pauline** looked after the printer's orders and a series of other things in the office including typing, the address and new subscriptions, plus many other things. He was usually in the office until 10:00 a.m. in order to take care of the printer's orders. He is 27 and is a resident in the present.

**The Regular Contributors**, who provide the backbone of the magazine and are usually in the office until 10:00 a.m. in order to take care of the printer's orders. He is 27 and is a resident in the present.

**John D. Gardner**  
**John Gardner**  
**John Gardner**  
**John Gardner**  
**John Gardner**

**John Gardner**  
**John Gardner**  
**John Gardner**  
**John Gardner**  
**John Gardner**

**Arthur** contributed to the Atari 8 in the office until 10:00 a.m. in order to take care of the printer's orders. He is 27 and is a resident in the present.

This is our first Atari 8 issue. We have completed the preparation and are in the office until 10:00 a.m. in order to take care of the printer's orders. He is 27 and is a resident in the present.

**The Atari 8 in the office until 10:00 a.m. in order to take care of the printer's orders. He is 27 and is a resident in the present.**

**ATARI 8 IN THE OFFICE UNTIL 10:00 A.M. IN ORDER TO TAKE CARE OF THE PRINTER'S ORDERS. HE IS 27 AND IS A RESIDENT IN THE PRESENT.**

**E**very long-term Atari 8 fan either will know or is very likely to know software is being produced for their systems. That is only to be expected for a market whose manufacturers gear up the good long ago but what is perhaps more surprising is how rapidly the same sort of situation is developing with the ST. This issue we have probably the widest ST coverage we have ever had and that is because the steady stream of review software of the past has now become just a trickle with most and some of the major publishers ignoring the ST in their future plans.

Looking through the software release schedules in the computer trade might also reveal that almost all the new releases are for the PC or the Amiga and this is confirmed by the press notices given out by the major software publishers. Looking through most of them will reveal only perhaps one new release due on the ST this year, whilst dozens are scheduled for the PC. One of the effects of this lack of interest in the ST is that the major advances in software design are now concentrated on other machines and what new releases there are are overshadowed by the quality of product elsewhere. This is particularly prevalent in the realm of role playing games and adventures which have progressed steadily on the PC and all but disappeared on the ST.

In the computer software industry it is impossible to forecast when will be the next phenomenon because the industry has only been around a dozen or so years. The big thing in the market is of course the games market where published publishers are willing to pay between \$40 and \$70 for a single game. Do you work in this line? Who would have believed that the computer world would rather buy a single title for \$4000 a copy than the \$2000 publishing costs and software prices?

What is sad about the current console dominated market is that many of the games for the Sega and Nintendo of \$40 equivalent are so many playable than dozens of similar games on the Atari 800X. Why is it though that the majority of users of the best home computer ever made would not dream of paying that price for software? It is hard enough to sell a one game period of under \$200.

Will the fact may not last and the console may go the same way as those early game titles? Perhaps when users find that all they can do for some time or a few months \$50 quality with an Atari 800X. As for other home you can come up with dozens of other users and with your own software for writing. Maybe that is why that is for them and why those who studied the 8 bit world seem to suffer unbalanced symptoms. You would be surprised at the number of phone calls we get from folks who want to replace 8 bit equipment. They told a year or two ago!

Buy with it. So far, I have more life in the old Atari than you might imagine!

L. J. Hingham

**RAILROAD TYCOON WINNERS**

The winner of our competition had been for a copy of Microgame's RAILROAD TYCOON and a Game of Strategy Microgame was kindly donated. What for the winner up and this was won by B. Walker of Cleveland.

**Coming Next Issue ...**

**CROOKED HOUSE** - a new game from Bill Hefland

**MULTILOAD** - a neat way of auto-booting your disks



# Mailbag

**Allan J Palmer  
sits in the hot seat  
at the sorting office  
awaiting your  
letters on all things  
Atari - get writing!**

Send your letters to  
**MAILBAG**  
Page 6 Publishing  
P.O. Box 54  
STAFFORD  
ST16 1DR

Welcome to my second Mailbag column. The trickle of new letters has begun to grow, but I look forward to more amusing and plenty of feedback on those published. In the meantime, here's another selection from the Page 6 sorting office —

Allan Palmer, Mailbag Editor

## CONGRATULATIONS

With **WORLD** 6 reaching the Tenth Anniversary issue the most recent batch of mail has included a number of congratulatory messages. Including the fine letter from Mrs of Hylke, Kent.

At Hylke, Kent I was lucky enough to obtain copies of the first number issues and can appreciate the prodigious advance not only in quality but also in the knowledge and experience of all concerned. Way back in 1983 I had never heard of Atari and it was several years later that I obtained my first **WORLD** and became acquainted with **WORLD** 6. Since then I have looked forward to the nice neat every two months.

## HARDWARE ADVICE WANTED

Congratulations were also included to a letter from Mr P Fry of London SE23. "I am writing to let you know how much I enjoy your magazine which I have been reading since issue 94 (January/February 1986). In May of 1986 I was given a desktop 80088 which was about to be sold and as such so attracted it is except to collapse."

After cleaning and reassembling the drive, cleaned and basic crash-recovery console. Mr Fry found himself with a working Atari 8008 and then continued to needed addition of hardware and software to create a fully usable system. Like many others, he discovered that the Atari Classic is not a machine with support in any high street or even specialist shop. Thus he found the Atari User

and was agonisingly surprised to find a number of solutions for the support of the 80088 system. My setup now consists of 80088 computer, 50101 controller, 1050 disk drive and 1027 printer. Lots of it only a matter of the missing parts and still need lots of help as I prepare to purchase a colour monitor and another printer in the near future. I wonder if some kind reader who just happens to be a hardware genius could list to write an article for the mag suggesting suitable monitors and printers to extend my existing system, a brief or glossary of the terms ANALOG ROM, DMA, EISA, VGA as used in reference to monitors would be appreciated."

In a letter we printers have already approved. I suggest you see if Page 6 will have copies of issue 53 which included a computer case feature on "The Printer Jungle". If you refer to issue 48, you'll find

a review of the Crosses 1020 printer. When it comes to monitors that a another story which doesn't seem to have been explored in print in any great detail. Is this your 6 first challenge to readers to what kind font do you use recommended for an Atari Classic system?

## WORD PROCESSING

The article about printers reminded of other should also help Diane Hayes of Derby, Leics who writes:

I would like to see my 80088, for word processing. I have a MacWrite Plus 4.011 version and an old (broken) 1027 printer. What I am considering is which one to get, one printer available to buy now? Would it be a good idea to buy now word processing software if the printer is quite advanced? (Type in highlight). The main point is this: what are you now with printer will require an interface to connect it to your Atari computer. The interface that would most available in the market is the well-known interface from Atari has produced or Derek Park, MacWrite Plus 4.011 or more in a comprehensive package, which includes a custom printer driver console, both so you should find required to connect a new word processor.

## USER GROUPS

It is a pity that there don't appear to many local Atari User Groups. In their heyday there were great places for answering the sort of questions posed by Mr Fry and Diane above. Maybe there are more Atari User Groups than we think? In Leicestershire, I have heard of 18 in Leicestershire, Derbyshire, Yorkshire, Warwick, Middlesex, Surrey, and others.

I am currently putting together a list of any 6 bit User Groups in Britain or elsewhere for that matter, and would like to hear from any User Group existing that would send me information containing where their group is based, the name of the group, the address to come to for more information, whether they have a PO Box and the day when, the day User Group met there please provide printer type and help keep the Atari Classic alive."

If it turns a while later, I will include a User Group list. Kind of look with this project and by the meantime have you contacted **WORLD** 6 from issue 53 or **WORLD** 6 issue 50? If you have any comments, don't keep the information in personal publication.

## LOAD FAILURES

A New User Group would be glad to help if help (without IBM or of Harvick Swartzel who has been having problems with local, commercial games.

I have an Atari 2600 (basic system) when I first got it I thought Ninja Spirit (and KROBOT) One Man & His Grand Old Dog (and Life Without) They seem to load! All my other games do. Can you help me?

Understandably it's difficult to diagnose a problem that is only described as "they won't load" if you have a problem. It's helpful to describe the circumstances as fully as possible. Have you disabled BASIC by loading disks into the Options tray while loading the game? Have the tapes been retained for the loading sequence? Do other games do the same loading procedure? Which games do load/you have problems? Do there seem to be any other things that you can do about or game loading problems and their cause?

## WHO DARES?

From the land of Neighbors, read (once & again) John Steink's writes from Victoria, Australia about another game problem that has the problem is unresolvable.

From a list of the 20 Atari users and Dealer Who I have read in the Association Dealer Who has had a newsletter about a new Atari video game called "Duke's Attack" produced by Microvision Software? Apparently "Duke's Attack" is being released for IBM C/AT Spectrum, Amstrad and Amiga. The 16 bit version costs \$29.99 and the 8 bit version \$19.99. We wonder if either is a release for the Atari Classic or planned for release. An Atari/Apple Highways have suggested that \$29.99 is the price. I hope everyone interested in this software is able to share something in preference a copy.

In the past Atari/Apple Software has succeeded a programmer that includes BASIC code (also in the Atari Classic line) users 2048-447 Did this game ever exist/ready? To be honest, I don't very much that my individual issues in the UK will receive a game in the Atari Classic. Our best hope is a clone from one of the European software producers like for Sol, in a way the Atari Classic is a bit like the good factor who have had up new information available for over a while now. I hope you enjoyed "The Complete Dealer Who" disk 170 in the Page 2 PD Library.

## ALL AT C?

So far, I've managed some sort of link between the letters in IBM columns (now here do I think the previous letter with this one?) All this the forward letter had a

computer named for, and the subject of this one letter is Am C. —John Young of Berkeley, CA has this complaint.

"The Public Domain Computer Am C (also referred to as Apple/IBM 68000 Game of New Atari User) and on a slightly less loaded case of Greg Star C, and on the basis of the article I thought I might try Page 2's PD Library (I've never actually run the computer appears to work, compiling the sample programs successfully, much faster than Greg Star C could. However, I haven't) try to complete the missing parts (which worked fine with BASIC) the computer crashes, despite all the required changes specified in the documentation being done made. Even the famous "Hello world" program causes a crash. A further thought slightly more possible, but at that when run under a modified DOS 2.0 the computer locks up without even prompting for a carriage.

Unless I have a corrupted copy, the game cannot run under and I would really think that no one has anything to do with it. I think my experience shows that it's either the authoring the system did not attempt to enter a program with Am C, but if most played with the sample getting most of the material for the game from the supplied documentation. It is also interesting that several obviously interested individuals get this general distribution."

This is something that I would like some feedback on. Am C is not a new product in relation to other PD Libraries which work. So does it work or not? Are there other Atari Classic C programmers out there who can give us more information?

## "GOOD OLD INDEX, YOU CAN'T BEAT IT." (Shellock Holmes - The Hound of the Baskin's)

Another complaint, but not so dramatic as the previous one, reader in London SW 17 who writes to express disagreement.

"I managed to get myself a disk which printed and enjoyed everything it says to the bit. I have the 650 interface, so no problem with a load from that, but a longer load was needed to get the printer. I remember reading an article in New Atari User mentioning the complexities of the link in you could make your own. Could I find the article on the contents pages of the magazine, so on?"

I also remember to a number of other magazines. At the end of each year for instance they seem to publish an index of the contents. How about it Page 2?

I must add that it gives me the opportunity to recall some details while searching for the information, so it would be a guide for me.

Back in 1985 reader Perry de Dink com-

plained an index to issues 1 - 12 which has made available for a B&E Disk. However, it seems to have gone on unchanged. This seems like another good idea/idea to New Atari User readers. You anyone compiled that area Page 2/PAL index? If you have or plan to, perhaps using a database like Home File/Plus (or Database Data & EasyFind or other programs) why not extend it to include so the magazine as an index? Do you see any correspondence with it, or otherwise else is looking for it, the article in question appeared in issue 55 (page 10) and it was unfortunately omitted from the Contents page.

## SPARTANOS

An index to the magazine would make my life easier in the current questions like the following issue New World of Turkey, that a Turkey in New Zealand, New Zealand which used to be the furthest point from Scotland on the Atari Classic and New Atari User magazine can be found.

Could you please inform me whether there have been any articles written on Spartanos before issue 55 or that a when I discovered New Atari User, if not then there likely to be any in the next issue?

The only Spartanos related article I could find was Spartanos Construction Set (Am C) Double issue (issue 12) and Spartanos 2 (issue 21). You could also check the PD Library for the 9 Atari User Utility disks. I'd love to see the Editor to let us know if any articles are planned for the future, or this a subject that others would like to see covered in future issues? Any volunteers to write an article?

## HOW DO YOU USE AN UPGRADE?

Denise also mentioned her letter that Bob Boynton in her letter and two days later. The following arrived from their Reynolds from 4 Transatlantic Drive, Turkey Australia, New Zealand.

I recently installed the 68000 upgrade by Steve Peterson from Page 2 PD disk (B&E) and the completed area seems to be the same as before. The only anomaly in the PD/AT 198800 reads 00000 and I can not find any copy of upgrading the status ROM in any of it works. Any help would be appreciated.

I think if you recall the documentation files on disk 2000 you'll find information about upgrading the main memory. By looking at the file describing the 68000, 2000 upgrade, the principle of main banks of memory remains the same as both the upgraded AL and 32, machines. The main 2000 is not available in any place beyond the standard 448, the main memory in

# Mailbag

submitted or read over 100 letters. In fact David Anderson's articles on South Pacific leg to NZU (issues 58 and 59) were also posted here on the night after his. The best article on the subject is probably Tim (the rock) & Russell (2) in the September 1989 issue of *ARTIC* (not by him). His descriptions and graphics a program that provides a super RAMdisk, no matter what industry upgrade is installed. How does it work? From anyone that who has up graded their Atari Classic going on a hard disk we have you can use the RAMdisk system for multiple large RAMdisks and the like?

## HUNT THE PROGRAM

From Belgium: Freddy was den Heijning enquires about a partner for program "Tantou" to add if somebody can tell me more about the program. MANAGER 3000 I think it was written by a Dutchman.

When I first posted your letter out of the back I made a list of all the programs but almost all were in a second copy of issue 4 of FUTURA (this magazine is) 95 Rue Saint-Maurice 10540 St. Hubert (Belgium) Tony Anderson (ATI), Scotland that that includes MANAGER 3000 which is described as a very powerful data base program which stores alphabetical storage. FYIAs options are available for Epson compatible printers. If you have an Atari 1000 please FUTURA issue 4 also contains a utility to print MANAGER 3000 files on that printer.

Freddy is also looking for fellow Americans on the Continent.

I would like to know if there is a User Group in Belgium or the Netherlands. If there is not, I would like users from that part of the Netherlands to write me giving me interested in starting one.

Freddy's address is: Veldstraat 11a, 1054 Wierde, Belgium.

Lastly, Freddy requested some help in upgrading machine code programming. Hopefully David Lee's First Steps series which begins in issue 53 is providing you with a good starting point. Freddy.

## XE HIGH MUSIC

Styl Research was from Creweley. Word that you are thinking Lee and Ben Tegan for an event but magazine and there still a few letters being submitted past the Classic is a moment a capital too.

Take really: although I cannot read off the money real play of the same issue. It a fun to experiment using the CLASSIC on old junction, with Modifiers and a Classic CDH again. I may be of interest in other readers that Page 8 PD disk. Music of America. (We work with theMozart using ATAT. This may already for a list of... just that I can't

read seeing it published in New Atari Over Using the Classic which is a wonderful high-end software. I want to know quite a few other some play better than others but the search, Wikipedia's Post seems to be the best. I have all the other make file dates in the Page 8 Library, some were made later than others. As these were developed for the POWER's second chip built into the Atari Classic. It is to be expected that some do not work very well with theMozart.

Thanks for the information Syd. The Atari Classic music never was totally touched on in the early issue almost all John & Deborah's articles. Should expect this to continue if more on what can be done with Mod and synthesizers or the 3 bits!

## FROM XE TO ST

Den Barenstok of Brighton, East Sussex, has had problems in porting some programs from the Atari to his Atari Classic to his ST.

"Perhaps someone could help me with a sign problem that I have with the transfer of my Teatex files to my STE. Having made up a full transfer table with the following conversions:

STE	800
pin 2	to pin 4
pin 3	to pin 2
pin 4	to pin 6
pin 5	to pin 7
pin 7	to pin 5
pin 20	to pin 1 6

I find that using Offsets on the 8000 and 10000 as the STE transfer will only make sense from the STE which is not worth it! The fact that my new computer set up can on opposite sides of the same screen that I have to use a long lead (I cannot obviously not a standard length, I would very much like to obtain a communication program like Modbus for the 15000 which has the potential for logging status) (St. Dave, Kent) have been frustrated?"

We've also had correspondence from Douglas Davenport (Ohio) and who has to be denied the CLASSIC from his dad judging by the letter. David is hopeful that the map post for the Atari Classic that is wrong as the customer, as described by Steve Price in his review of December 82, to have 800 again over into the UK. Perhaps with the Single European Market of 1993 this could become more of a reality? David is one of the gang interested in the Atari Classic, why many papers on the CDH or other 8-bit series) I reported in the Atari Classic, wishing to full capabilities.



## HALL OF FAME

Tom Ralston of Leigh, Lancashire, brings an interesting suggestion for all games: "What is

"There is one thing that I would like to encourage and that is for all programs to have ranked games in their Atari Classic and to further magazines and CD disks to create a Hall of Fame ranked with Atari Classic high scores to date. I believe that all games should have at least the top ten high scores to date and I have determined that I am not going to tag any more that do not do this. Also think that great game reviews should give us the information about their review games. You have published many games, particularly by theMozart which could have been more suitable with a high score save. I have done this myself with the CLASSIC games you have published but I cannot program a machine code so I am unable to add a high score save to these games.

I agree with your view that the addition of a Hall of Fame feature does make games more addictive, giving you a record of what score to aim for on the next occasion you load the program. However, there are many excellent games which you will depend yourself if it you cannot succeed to play these with that facility. You can

you're modified RAMdisk games to accommodate this feature. Have you developed a generic routine to accomplish this? Is a something you could contribute to the pages of New Atari User? Perhaps someone else will provide a similar feature for their printing, to maintain code games? Modified by any means should enter but's interests users who would not have a time to this facility.

Thanks for your thoughts Tom, what do others think?

## SUPPORT YOUR LOCAL

### SOFTWARE HOUSE

David Wright from High Wycombe, Bucks, is an Atari game player who has these observations:

"I recently wrote to Synapse Games concerning their first Atari 512 game and nothing about my situation. I'd just reply they informed me that if the market for the Atari 512 did not pick up then they would not be producing any more software for the Atari. They stated that the sales for it did not live then the actual cost of writing and producing the game. On the one hand it says people to tag it with a rating game and to show support for any new releases.

What score is there to tag?"



## TAPES TO DISK

Another beta gameplayer in Manila this week: Steve Levin.

Levin likes an Atari game for more than games that feature only fast eye-hand coordination since attempting such control via joystick seems, but being on the Atari itself isn't so hard to hold my frustration as the number of apparently great British games available for only one tape. It makes me cringe every time I spot a copy of New Atari Cart and my loads of games (including a few old American ones) that are unobtainable for distribution outside me. Is it not possible that Macintosh and other budget computers cannot support all these games to disk, even if it's not through retail order channels? After all, who could complain about spending \$4 to \$5 for a particularly good commercial game on disk?

Has anybody had any correspondence with Macintosh to offer computers on this subject? Are there any particularly obvious reasons why there aren't budget disk releases for the main problem: the relative densities of each a product? In the mean time, have you considered purchasing the "TransDisk II" unit from the Page 6 Accessory Shop? Oh, you'd need a cassette recorder as well, but if you have a cassette recorder, another wonder is on the side in the shape of TurboDisk: high speed tapes available from Greek Firm's Micro Discs.

## DISKS AND DOS

The finding of "TransDisk" above leads me to this letter from C. Andrews of Los Angeles, CA:

"Is there a utility that enables you to convert TransDisk .DS files to standard DOS .DS files? Also, is there a utility that enables you to convert from TransDisk files to binary .COM files?"

Did you know how if you are using DOS 2.1 or any other Enhanced Density DOS when using options C: Copy files or D: file printer files if you are copying or displaying files that go beyond sector 787 you will receive either an error message or the < > characters on either side of the file to the extent of sector 787. I understand that standard compatibility with DOS 2.0 that surely they could have come up with a fix? Has anybody had experience of the rest of utility Mr. Andrews is enquiring about? A possible program MAY be FILETOBIN based on PERMAN Disk 3 from Sausalito Bay of the North of Scotland Atari User Group (NSAUG) 74 Walker Road, Torry Aberdeen AB11 3EL, Scotland or from the Page 6 PD Library. Can anyone confirm this?

Has anybody else understood what point you're trying to make about DOS 2.0

Atari used the Williams mode DOS 2.0 as compatible as possible with DOS 2.0. A DOS 2.0 formatted disk just can't hold as much information as one formatted with DOS 2.0 as the 4 and 8 characters are used to show those files as a DOS 2.0 disk that was used for some time using DOS 2.0

## AM I DENSE ABOUT DENSITIES?

While on the subject of DOS 2.0 a letter from Robert Francis of Nevada, West Co. inquires as to tape clarification.

"I'm confused in the subject for EDCOL disk magazine. Some of the disks require a double density drive. Are all DOS 2 double density? If not, how will I know if my DOS 2 is double density? The MS-DOS seems to me DOS 2.0. Am I this dense my dear is double density?"

Do any of the British companies (e.g. Atlas or Alternative Software, Zapple) will produce 8 bit games? It is a shame that Atlas does not re-release the DOS2.0 of the Spectrum due to a success. The DOS2.0 of a cheap price should do well?

The subject of disk densities has cropped up recently. Does that imply HQ The Atari Source, Valley View, Calif. (944-894) noted on issue 8 of his Atari News Disk that he had "recently received a 7 1/2 tape copy from about disk subject. The whole tape must be over my descriptions in the PD magazine. I remember disks on 50 sector DOS 1 tape 50 sectors on any drive, but DO needs a 1050 that DOS is sometimes used to do write over DO disks (1988, forward when to use by US doubles and floppy). The standard 1050 format is often referred to as enhanced density or variable density. If I think to use simple format single and double are run and constraints. Does anyone that is in the PD library? I only have 2 disks which need a floppy US double 1050 to run, and these disks say that in the catalogue. Also PD centers on 50 sector capacity. Very very few PD disks do any other disks for that matter need a changed 1050 to run.

I agree with Data's view: use of Atari software formatted and PD has to be compatible with the vast majority of drives and therefore must use the standard for use of an 819 or 1050 so to the Atari Classic world there are only two standard formats: Single 519 and Dual 1050. The relatively few packs of software that use 1988 formatted disks should be identified specifically as such. I've looked back at EDCOL's advice in MAIL and realize I had say that over-dense double density. They either refer to "enhanced density" or 1050 format. All standard 1050s are capable of reading disks in the enhanced format provided by DOS 2.0. 40 tracks of 25-125 byte sectors but only 1024 sectors

(available in DOS 2.0). When (if) it's changed the 1050 they can read disk format 144 available compatibility with the PD and DOS 2.0 as DOS 2.0 may have that of the problem seems to be Atari's use of 40 tracks over description for the 1050 provided by DOS 2.0. In the event a format with the 1050 disk drive, they will be both enhanced density and a 1050 disk drive (page 144)

## NETWORK THE 8-BIT?

Article starts from Lempster, Telford has an interesting question which one of our readers inquires may be able to shed some light on.

I am currently using two hard drive units for several great deal on Atari 1050s and 1050 drive and find that formatted files use the same 1 unit of them very well. Initially, used programming with a Panasonic KAP1001 printer. I noticed a 1050 used to 500 machine and have been wondering if it is possible to have more than one machine connected to the disk drive. TV and printer is would be very convenient to be in case a 100 program and a spreadsheet running at the same time in different machines with the ability to switch between them without unplugging one machine and making a physical connection with the other. Is it also possible to connect disks for storage to the other machine or to this existing network? Another idea occurs that for has enjoyed reading one magazine about issue 8 of Page 6 and his storage set is now an erasable reader.

Well, I'm a bit out of my depth when it comes to these reader's hardware questions. So let's hope that we'll get a few letters on the possibilities of networking a group of Atari 8 bits. Something should be achievable unless there at least one M: A Atari Bulletin Board that may wish a connection of 500s linked to a standard printer and hard disk. When it comes to transfering data between machines, use a common transmission program like Netnet to be used with an appropriate interface module to connect the computers?

Well, that's it for another issue. Don't forget that Mailbag is only as interesting as your letters, so let's have your answers to the problems posed. This issue together with some case topics and comments. I intend to make Mailbag and Netnet more out there so that instead you need to join in. I am waiting for your letter?

**WRITE TO MAILBAG at  
Page 6 Publishing,  
P.O. Box 54, Stafford,  
ST16 1DR**

# KEYPRESS

## A Reference Guide to Atari's Special Characters

by Peter Kirton

Occasionally letters appear in *Mailbox*, representing a backlog of the keypresses used to generate the Atari "special graphics characters." How many of us have problems finding the issue of their favorite magazine which provided a table of these characters? A separate list on a sheet of paper which could be kept handy at the computer would tend to solve this problem. In this case, I decided to write a short program to do such a table on my printer, showing the graphics character, its keypress combination and the decimal equivalent of the character.

The program does not have any fancy title. To make this compatibility with most of our old printers, I have kept to single-column list layout graphics (ESCAPH) by all text points to default list and print settings on many printers are not Epson standard codes to change them. However, the final output is a neat table which will be a handy reference to help in typing many magazine listings. The DATA statements may also come to handy as they contain the actual Atari special character set.

Type in the program and save it as a disk which is kept in an accessible spot. When the program is RUN, you will be made to deal with the printer as before; proceeding, there are key and, in a minute, your list will be complete. If you time it for me, my mistake and just if every somewhere with users to be soon speed simply print out, another one. Now you can spend more time typing with less time wasted by searching through back issues for these list codes.

```

00 1 000 *****
01 2 000 ** ATARI SPECIAL CHARACTERS **
02 3 000 **          PEEKING LISTING          **
03 4 000 **          by Peter Kirton          **
04 5 000 **
05 6 000 **
06 7 000 *****
07 8 000 ** ATARI SPECIAL CHARACTERS **
08 9 000 ** ATARI SPECIAL CHARACTERS **
09 0 000 *****
10 1 000 *****
11 2 000 ** ATARI SPECIAL CHARACTERS **
12 3 000 ** ATARI SPECIAL CHARACTERS **
13 4 000 *****
14 5 000 *****
15 6 000 *****
16 7 000 *****
17 8 000 *****
18 9 000 *****
19 0 000 *****
20 1 000 *****
21 2 000 *****
22 3 000 *****
23 4 000 *****
24 5 000 *****
25 6 000 *****
26 7 000 *****
27 8 000 *****
28 9 000 *****
29 0 000 *****
30 1 000 *****
31 2 000 *****
32 3 000 *****
33 4 000 *****
34 5 000 *****
35 6 000 *****
36 7 000 *****
37 8 000 *****
38 9 000 *****
39 0 000 *****
40 1 000 *****
41 2 000 *****
42 3 000 *****
43 4 000 *****
44 5 000 *****
45 6 000 *****
46 7 000 *****
47 8 000 *****
48 9 000 *****
49 0 000 *****
50 1 000 *****
51 2 000 *****
52 3 000 *****
53 4 000 *****
54 5 000 *****
55 6 000 *****
56 7 000 *****
57 8 000 *****
58 9 000 *****
59 0 000 *****
60 1 000 *****
61 2 000 *****
62 3 000 *****
63 4 000 *****
64 5 000 *****
65 6 000 *****
66 7 000 *****
67 8 000 *****
68 9 000 *****
69 0 000 *****
70 1 000 *****
71 2 000 *****
72 3 000 *****
73 4 000 *****
74 5 000 *****
75 6 000 *****
76 7 000 *****
77 8 000 *****
78 9 000 *****
79 0 000 *****
80 1 000 *****
81 2 000 *****
82 3 000 *****
83 4 000 *****
84 5 000 *****
85 6 000 *****
86 7 000 *****
87 8 000 *****
88 9 000 *****
89 0 000 *****
90 1 000 *****
91 2 000 *****
92 3 000 *****
93 4 000 *****
94 5 000 *****
95 6 000 *****
96 7 000 *****
97 8 000 *****
98 9 000 *****
99 0 000 *****

```



# FIRST STEPS IN ASSEMBLY

## part 5

**W**elcome to the final installment of *First Steps in Assembly Language*. I hope you've kept up so far. In this final part I will attempt to tie up some loose ends and introduce the odd or two commands so that you can turn out from about the world. And as the grand finale I present a table of all the available 68000 instructions as a kind of reference guide.

In the earlier part of the series we discovered the **CLD** and **STC** commands whereby you could set and clear the carry flag in the status register. It is also possible to set and clear other flags in that register. The available flags are the **Decimal** flag (the overflow flag), and the **Interrupt** flag.

### **SEI and CLI**

I'll begin with the **SEI** (set interrupt) flag. When this is set, interrupt requests are disabled and when cleared interrupt requests are enabled once more. The commands are **SEI** (set interrupt) and **CLI** (clear interrupt). The only way I've seen these commands put to use is in signal and interrupt driver routines where the command **RTI** (return from interrupt) is used as the **CLI** equivalent of **RTS** (return program branch).

### **CLV**

**CLV** (clear overflow) is used to clear the overflow flag. Note that no equivalent command exists to set it.

### **SED and CED**

Lately we've had **DEC** (Decimal) and **CLD** (Clear Decimal) instructions. **SED** enables access to a special mode where operations are performed in a bit's domain, an **Binary Coded Decimal** mode of **BDD**. This is where the value of the register ranges from 00 to 99 instead of 00 to FF as is usual. It is used as its name suggests to represent decimal in a better form. The format table below of four bit operations in the table also uses the highest nibble represents the four digit (each digit of course goes from 0 to 9). There should be no problems to this. A problem in **BDD** arises when a addition or subtraction of two numbers in the format occur.

□ □ □ □  
□ □ □ □

In normal binary addition this would produce an answer of

*Daniel Lea concludes his series on Assembly Language programming with a summary of all the commands available*

**SED**. However, as you know this is not a simple addition, a Binary Coded Decimal number. The answer in the special mode is not considered correct.

Once **SED** is used to activate the **BDD** mode, the next instruction always of 99 + 11 appears. That is, 110. In this case **SED** is in the status register and 1 is the carry flag. **CLD** would enable the processor to do a total add to mode.

### **NOP**

I'll complete our look at the available code commands with a command which does not do anything. This is called **NOP** (no operation) also nothing (no) or delay (the processor slightly). Hence it is quite useful in delay loops.

The reason I think why this command exists is all so that in the last old days of computing people didn't have assemblies with which to program machine code. They had to do it by hand. So the **NOP** command was created by the designers, one advantage is that a programmer could insert gaps in his program (it is filled with **NOP**) so he could insert instructions at a later date without having to translate any jumps and branches etc.

That is only an example for the table which you will notice somewhere about this page for the rest!

If you have followed all of my articles you should have a good sound knowledge of programming in Assembly Language and be able to program into some very advanced programming, maybe even write your own machine code game. To advance yourself from this point I recommend *Mapping the Atari by Computer* as a superb book. And also keeping an eye on *IBM C/C++ for Atari* are some super articles in back issues if you get through them. Anyway happy programming and bye. See you at **IBAP**.











# SNOWBALL

**S**imon Carter has been waiting a long time for his task to be made finally easier. He provides up now with the complete solution to **SNOWBALL**. From level 0 to 4, it's a bit big, since help is below in the full complete solution. I wrote the right way round, it is a bit long (but long is the name), but I've got it with some steps that I must promise that I've it after this time. I'll have a nice page of them if they don't appear like some days. They'll be with you shortly. I'll be a reminder that the solution is read the right way so that **PLUMB DOOR** - **PLUMB DOOR** (single) is right.

Let a go!

Open the coffin by pulling the lever. Get out and go North in the secondary window. Between another coffin by pressing up three buttons. Go south and use the coffin to go through the trapdoor to the ceiling to the next level. Go North again and leave through the secondary door, avoiding light traps in all rooms. Travel east until you reach a hallway by the door. Press this button once to call the lift.

Enter the lift and when the door has closed position the weight on the floor. Continue descending until you reach a pit with a button. After using this button go up through the lift and beyond until you enter in a trapdoor on the top of the shaft. Open this door. Once through go South until you come to an altar. The trip is long so don't be fooled by repetitive level items.

Once in the altar you will find two buttons - green and yellow. The rule with altars is that the green button opens the door you have just come through while the yellow button opens the door you are about to go through. In this case the green button will open the north door and the South door will be opened by the yellow button.

Go through the South door and you reach the smooth cylinder. Its door from the smooth cylinder into the entrance passage and get on the coach. What I have to do here and then get off. Having a message station you can easily miss here. Stepping on the coach has very serious consequences. Use your best guessing what they are!

After leaving the message go east and get the starter lift and leave the bridge. Return to the smooth cylinder and go South to the cylinder. What here is a red in approach and below it down. You can try before a robot enters but you will be rejected.

Now go South from the large low room through the heavy lift to the ramp. Get the ramp and return to the heavy lever. The ramp goes into the window and then through the doorway. Two colors will be given - green and the crew member you are supposed to use. Make a note of the crew member's and it is really important. Using the instructions from the bottom get the hat put from the window.

Now go to the cards and examine the card. You will find some 0-9's. Upon examination it will be discovered that they are in a diagonal pattern. Go to the cupboard in the North of the door and get both cups and keep return to the door and insert the cup into the machine. After filling the cup with this ink it should go to the top perspective South of the 2 W Heavy instead. Once there search the body and take the hammer, pickaxe and Revolver and

## a complete walk-through by Simon Carter

Now go to the candle and near the door. To walk up the main staircase the screen 10004, Alt 00, 00194 (before X is a number).

Return to the store and enter the date. This will bring you close to the damaged panel or door. When you find them attack the damaged panel to hit.

Once you have hit and while you're in the room look for it as the main window area. When it is in your possession give the part to the door and it will give you a button below.

Now you need to obtain the lever from the door handling the screen. This is accomplished by the following method:

- 1 Get the red ticket from the red ticket machine
- 2 Swap the red ticket for a red item
- 3 Get the green ticket from the green ticket machine
- 4 Swap the red item and the green ticket for an orange item
- 5 Get another and ticket
- 6 Swap the red ticket and the orange item for a yellow item
- 7 Get another green ticket
- 8 Swap the green ticket and the yellow item for a green item
- 9 Get another red ticket
- 10 Swap the red ticket and green item for the lever. Lighten

Now go to the narrow Maroon cylinder and enter the altar. Remember here to wear the hood and helmet. Also insert the hat in the lamp. You are now ready to traverse the level. This will take you to the level below the platform. A number of messages will use it to go to platform 5. Enter the Smooth Cylinder and go north until you reach a door room with a block of red and an arrow on it. Attack the block to your left and place the coin in the machine. Now close the coffin.

Return to Platform 5 and visit Platform 0, F and H. In G get the arrow. At F go to the south corner of the car and get the black cylinder. At G go to the large lamp and get the orange cylinder. Now go to Platform C and dig to the coin by the ladder to find the key to the secondary. Enter the secondary door and get the key to the secondary. Leave the secondary door you are next to the ladder drop (the key) and go to the top level (the key) and get the ladder. Use the key you need to make the crew member to obtain the security code for the door to the Tilted.

The key has the crew member code you received in the library in its follow:

- Colour 0 Mercury door - Blue or green
- Colour 1 Colour of floor or desk
- Colour 2 Sector on the corridor
- Colour 3 Level of floor or desk
- Colour 4 0 - 9 - Ciffer code itself

Return to the first lock you used and go North. Examine the handle you received from the lady regularly. It will have a series of colors on it. When the last colour is the same as

**it goes on over here** 



## QUICK E'S \*\*\*\*\* QUICK E'S \*\*\*\*\* QUICK E'S \*\*\*\*\* QUICK E'S

You Go, Quick E's! Find Missing! The Netherlands! Fast up's another tip! **FREE!** If you type in CHASE then you can check the starting level by entering 0 to 3.  
Secondly - **MISSION BALANCE**, if you type in the name of the author JAM/JZ P/LLC then you can also enter the starting level by pressing 0 to 3.

# SNOWBALL continued

## SCORING

1 to 100 points for each of 1 to following objectives -

1. Operating the miller
2. Demounting the front roller
3. Removing the top of the elevator shaft
4. Strong mounting
5. Using the vibrator
6. Using the roller vibrator
7. Tilling the square cup
8. Using the screws at the rear end of
9. Requiring the junker shaft
10. Obtaining the lens
11. Working the loose screw member
12. Learning the security code
13. Operating the security door
14. Requiring the secondary track
15. Searching for the staircase
16. Removing the massive window
17. Closing the white ledge of stairs
18. Descending the portable ladder
19. Removing the ladder from the round room
20. Requiring the ship to submerge

While in the miller, use numbers 0-9 to go down the ramp in the way of the rollers. Go East or West and you find the 00 button. Pushing the 00 and you'll be level corresponding (close to number 4 above). If number 4 was blue then you will be on the blue button in the 00. Leave the 00 and go 4 and you'll be on the blue button in the 00. Light in the ceiling. With the light in the ceiling use the same as colours 4. I used 4 when the secondary corresponding to number 1 above. Use you - the three features that are the same colours as 0 to 3 and 4 above. Take the coffee that appears in the round room, which is in the north of the 00. To fill the coffee, you need the starter kit. Remember that you will have to visit the 00/00/00. Use the screw vibrator to make you then the cup with the blue level instead. They will then give you the 00 for the security door. You can now return to the door and go through from the level glass, go North East and get the silver key that is in the observatory and get the dark glasses from the pink room you need to get the key.

Return to Platform C and go down to the staircase. Use the remote control and dark glasses and make sure you are in possession of the lance and linked cylinders. You can now make the staircase track. Using the key you found in the tower enter the staircase, start it by turning the key.

Now make sure you have got the ladder. After that take the key and walk to the door. Go to Platform D and climb the ladder. From the bottom go North through the 00 button and you reach the massive window. If you can open the window with the remote in 0. From here climb Jacob's ladder and if you reach the side ledge. Drop the key. This will go about removing the silver key you carry on. Climb the ramp and when you reach the T junction use the silver key. This makes your way to the round room. After entering you will see a terminal with a rather interesting touch. Now play or lose the dice which will show the level. You can now be collecting the items with the far independent area **FREE! EXTENDING**. So can now return the ship to its pilot by pulling another lever.

### It's a Free!

## HELP WANTED \*\*\*\*\* HELP WANTED \*\*\*\*\* HELP WANTED \*\*\*\*\*

Just one way to help the tipster - if there's a new or interesting item on **QUEST TRACK** I hope that I have spotted this one first (I don't) by **QUEST TRACK**.

The idea when in the tipster? I don't know but I do, you're right but there's no one thing wrong. Also when in the tipster there's a lot of things that are wrong and you can't get the game steps and an error the way it works out. It's a different each time. He said if there's some thing wrong with the game or the data or so he'd be doing something wrong.

Right so there's this issue's challenge. Don't stand there reading I'll get busy and make it. I know's problem.

The glass plate and again for more steps and shall be for next as it's getting rather late here in the day and I'm still sitting up. You always get the solution and steps to work in your day. I have seen the steps before but I'll be pleased if I can find the steps of **Miss User** that they appeared to.

Anyway - see you next time. Night night and I'm always ready for plenty of reader tips.

Send your hints, tips and maps to

**The Tipster  
New Atari User  
P. O. BOX 54  
Stafford  
ST16 1DR**

## FREE CASSETTES!

A year has slip so now is time to send in the "Tapes" you can claim a **FREE CASSETTE** from the game company available from the Anniversary Special! If you prefer you can also send something in the "File" - get typing now!

### HOW TO CLAIM

If you see your name in this column send this on to the game company. You'll receive it and simply tell us which cassette you want the game or alternative (if it's possible) we will ship it off to you. Please note (if it's possible) if you prefer you can always give us something instead of the usual "Tapes".







2000-47) should use standard DOS 2.0 and XTMS1 systems (TransDisk II compatible double density DOS (Department of Mines, 4 04) New type in Listing 3 checking a write TMS1 II mini-a disk, and then signal the process for Listing 2. Both systems should use both these programs with their DOS 2.000 disk, all other drives can use any disk they want.

You will now need a blank cassette. Any good quality 60 or 90 minute cassette should do. If you are tempted to use a lower quality cassette, there is evidence that the better the cassette, the higher the chances of a successful transfer on your first attempt. The process is as follows:

**Step 1** First insert your blank cassette into your cassette player (if available) to the beginning, then wind it on a couple of rounds to get a good leader. LOAD and REWIND Listing 2 from disk. You should now be at two loops. Press down both the PLAY and RECORDED buttons on your cassette recorder and then press the RETURN key. The program should now have moved to cassette. The first step is to run a complete. You need only do this step the first time round, after this the program will be stored on your cassette and you can then use it on many times as you wish.

**Step 2** This step is only necessary if the game that you want to transfer has a leader section. A leader is a short piece of code which loads in, basically displays a loading screen and then loads in the game itself from the cassette. If the game doesn't have a leader then skip this step. If it does then you should press the leader onto a disk in the usual way. Then to test up with TransDisk II, select the standard cassette read option, select a test stage load, and then when it has finished loading, press a test disk using the Write option. The only difference is that this file should be saved to disk with a LDR extension instead of the usual EXE extension. If the screen you were transferring Sylix, then you would save the leader onto your disk as SYLX.LDR. This file should be saved onto a TransDisk II, using disk 1. If the game has more than one leader, follow the same piece of code, then you should load them all in together (by using a multiple stage load, with as many stages as leaders) and then save the file with a LDR extension.

**Note:** It is a good idea to reset the cassette counter to 000 before you start transferring the leader, and then make a note of the counter when the leader has been transferred, just to make a loading error screen later on. If this on the same disk you should transfer the cassette back to the beginning, reset the counter and then wind it on to the normal roller, ready for your next attempt.

**Step 3** Put the cassette into which you saved Listing 2 in your disk, reset it to the beginning, enable your computer and disk drive off before re-loading the disk first and then press PLAY and watch your COMPUTER ONLY load on again while loading from both the START and OPTION keys, and then press RETURN. The program should now load from a test sector. Once it has loaded you should have one loop, and then the cassette should stop. If this doesn't happen, then reinsert and try again. If after a few goes you still haven't got it working, then Listing 2 has most likely not been saved properly so you need repeat step 1 again.

**Note:** Even if you do have a successful step 3, you do not have to repeat step 2. Step 2 need only be done once for each game that you wish to transfer.

**Step 4** Now wind your blank cassette on a couple of rounds then replace a good cassette with the cassette game you wish to transfer and press PLAY and then RETURN. The game will now start to load. It is at this time the cassette stops and the screen goes BEE, there a loading error has occurred. If this happens then you will need to reinsert the cassette then run as step 2 if the game has a leader, and repeat steps 3 and 4 again. If however the cassette stops you get a GREEN screen and you hear two beeps then it has been successful.

**Step 5** You should now insert your blank cassette, reset the cassette counter back to 000, depress both the PLAY and

RECORDED keys on your cassette player (if available), the game will now be saved onto your blank cassette. If you're lucky, you'll have the first half but finished saving, the program will stop and you will hear another two beeps. When this happens the whole of the cassette counter should be zero and press RECORDED the second half will now be saved.

**Step 6** You have now split the large file into two smaller parts. This one version of the game, saved as two halves on your cassette, is usually suitable on its own and if you are unable to load it then you will simply get a boot error. Now you need to boot up with TransDisk II and copied your cassette until the counter reads 000. Then using the Standard cassette read option from the menu, pass the first half onto a TransDisk II, then click to the normal way, specifying a test stage load. When starting this file you will experience instead of a GPO extension. Then repeat process for the second half, only this time use a 2 extension. Again if you were transferring Sylix you would save the first file as SYLX1.1 and the second one as SYLX2.2. If you get an error when loading the first half, then transfer the cassette back to 000 and press the write option. If you get an error when loading the second half then transfer the cassette back to the counter value that you wrote down in step 5 and try again. If you get several cassette read errors, always in the same place when using TransDisk II, then the most likely problem is that the file has not been saved properly. If this happens then you should go back to step 3, and start again. Note: All files should be saved with a 1 extension file name, with only the extension changing. As in the Sylix example the file should be saved as SYLX1.LDR, SYLX2.1 and SYLX2.2 for the leader file there is an extra and second leader respectively. If you don't use this extension then Listing 3 will not function. Another example of a file that could be saved as SYLX1.LDR, SYLX2.LDR and SYLX3.LDR.

**Step 7** If you have made 2 files for each the hardest part has been done and all that is left is to link the files back together again. This is considerably easier and uses a less error prone than splitting them up now. This is where Listing 3 comes in. You should now be back LOADING 3 from disk and RUN II. You will now be asked for a file name, if you want to use the disk directory then you should press RETURN on the screen of this stage. Otherwise you should type in the name file name that you want and save the file to disk, but WITHOUT the extension. So if you were transferring Sylix, the files for which you saved as SYLX1.LDR, SYLX2.1, SYLX2.2 you would simply enter SYLX1 on D, as necessary, but it will still work if you do include one. For example, you only use disk drive to support, so people who use two drives will still have to swap disks like the rest of us. You will now be asked if the game has a leader. If it has then press Y otherwise press N. All you have to do now is follow the prompts. These prompts will ask you to insert the right disks at the right times. The source (444) are those sets which you saved the right files (SYLX1.LDR, SYLX2.1 and SYLX2.2 in the example) and these will be referred to by the name of the file. So you will be asked to insert the right disks for the SYLX1.LDR disk or the SYLX2.1 disk or whatever. The destination disk is the disk on which you want the final working version of the game, to be saved on. Both the source and destination disk need to be TransDisk II format disks. This source and destination files may be on the same disk or they may be on different disks, it is entirely up to you. You must however have enough free sectors on the destination disk to fit the whole joined file in. As a guide you will need to add up the number of sectors taken up by the leader of these files, and the first and second halves of the game. So if for example the length of the files were as follows:

```
SYLX1.LDR      - 14 SECTORS
SYLX2.1        - 158 SECTORS
SYLX2.2        - 167 SECTORS
```

```
TOTAL          - 439 SECTORS
```



## XL/XE PROGRAMMING

# SLIME BLASTERS

**T**he final blaster in the series is a game called SLIME BLASTERS and although simple, it demonstrates the use of the three multiple video routines contained within the ZYXARCOS game, published on the last issue. If you have the hardware listing there, you may have noticed some error by listing the items 24100, 24246 and using them on the basis of this issue's listing. The listing is heavily XROMed and should be fairly easy to understand, so type it in and don't forget to send a copy before you ROM it.

## HOW TO PLAY

The game involves two players using health, psychic, who moves along the edges of the display, blasting objects of equal value. The first step to reach the target score, and before playing, wait!

Once you have finished playing the game, you may want to see the routines that score the shots, award the effects and move the monitor, in your own program. If so then read on.

## HOW TO USE THE ROUTINES

The sprite (moves on the screen as a player) and audio routines work in conjunction with the PMC Player Module. Copied into memory, before calling the routines you must:

1. Store all data for the player images and sound effects in memory. Lines 140-416.
2. Set up your display (Playfield). Lines 706-735.
3. Define each game, clear a page at 1326 and store movement table. Lines 736-738.
4. Set up the PMC system. Lines 780-795.
5. If you are using the sound routine, enter a list equal to line 795.

## THE SPRITE ROUTINE

To use the sprite routine you must have some sprite image data in memory. The computer file gets this data in the same way as EXAMPER.SD does, the difference being that sprite data can be more than eight bytes long.

The format for the sprite call is:

CALL USR (SPRITE, SPRITE, SPR, PWR, SAG, FLN, PMA,  
STP, ASP, DR, LNK, LNR, STX, STY, YMR, YMS, PDR,  
PQY, QUA, QUL)

**Steve Lakey concludes his series by letting you in on the programming secrets behind his games**

The parameters in this call are as follows:

**SPRITE** Range: Not Used

This is the address of the routine, which can be stored any where in available RAM. Its use can be 0 (to be entered twice at the beginning of the calling command).

**SPR** Range: 0-3

This is the sprite number, equal to the player number.

**PWR** Range: 0-65535

This is the base page of your PMC area (PMC AREA/END). If you use a different PMC area to the one in Listing 6 then it must be on a DR boundary.

**SAG** Range: Not Used

This is the address of the image data for this particular sprite. If there is more than one frame to your sprite, then each frame should be the same size and be placed in memory, one after the other.

**FLN** Range: 1-64

This holds the length of a frame, even if there is only one.

**PMA** Range: 1-255

This holds the number of frames.

**ATP** Range: See text

This is the AmigaDOS Type:

0 = Wrap around arithmetic

eg. 1 2 3 4 1 2 3 4 1 2 3 4

1 = Behaviour arithmetic

eg. 1 2 3 4 5 3 2 1 1 2 3 4

Adding a 2 to ATP will allow the routine to use joystick 2 in long as joystick 0 has been enabled with 749.

**ASP** Range: 1-255

This is the AmigaDOS Speed, 0-Fast, 255-Very Slow.

continued on page 28



# SLIME BLASTERS

14 THE NEW **SLIME BLASTERS**...  
 15 THE NEW **SLIME BLASTERS**...  
 16 THE NEW **SLIME BLASTERS**...  
 17 THE NEW **SLIME BLASTERS**...  
 18 THE NEW **SLIME BLASTERS**...  
 19 THE NEW **SLIME BLASTERS**...  
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continued







For playfield collisions the value should be:

- 1 Collision with Colour 1 Loc: 7104
- 2 Collision with Colour 2 Loc: 7104
- 4 Collision with Colour 3 Loc: 7104
- 8 Collision with Colour 4 Loc: 7111

These values can be added together. For example, in the **INVADE2** game, after collisions with the startle were detected with a value of 11, which equals collisions with 1, 2 and 8.

For player collisions the value should be:

- 1 Collision with Player 01
- 2 Collision with Player 11
- 4 Collision with Player 21
- 8 Collision with Player 31

These values can also be added together. Once a collision is detected, depending on which sprite it is, one of the four localities at 1687-1690 is cleared, stopping the sprite. Also one of the four localities at 1736-1739 is set to 1, indicating a hit. In listing six, Locality 1687 is assigned the variable **GO** whilst 1736 is assigned the variable **HIT**.

Setting **SPX**, **STY**, **LNK** and **LYT** to zero will cause the sprite to be plotted and immediately disabled, turning the collision into a plotting routine. This is used to plot explosion frames, where the initial coordinates can be found at localities 1764-1767 and vertical coordinates at 1768-1771. These should be using **GO** to **PRG** and **SPY** (see lines 4704-4706).

## THE MISSILE ROUTINE

The format for the missile command is:

```
CALL MRP(MISSILE, MISSILE, PRIORITY, MSL, TRV, MCG,  
OPE, OFY, DR, CLN, CVL, LNK, LNF, PEG, POY, SAC, PLN,  
STP, HT)
```

The parameters in this call are as follows:

**MISSILE** Range: Nil Value  
See list for **SPRITE**

**PRIORITY** Range: Nil Value

This is the **PRG** base page + 240, equal to the **PMG** area.

**MSL** Range: 0-3

This is the missile number.

**TRV** Range: Nil Value  
This should be set to 3.

**MCG** See list

A speed value in the range 0-32 should be multiplied by two when you wish to add:

- +128 - Stops missile moving off the top or bottom; then replotting.
- +1 - The missile fires; **PRG** & **PMG** as memory locations.

Remember, the higher the speed the more area there must be for missile image data.

**HT** Range: 0-255

This offset is added to the initial horizontal position.

**OFY** Range: 0-255

This offset is added to the initial vertical position.

**DR** See list

A value in the range of 0-7 gives DR a sprite rotation option.

Note: Then if you wish, add one of these values:

- +128 = Wait for trigger 1
- +64 = Wait for trigger 2

**CLN** Range: See list

A value of 128 always collision detection whilst a 0 tests for Missle to Playfield collision and a 3 tests for Missle to Player collision (See **TECHNICAL INFORMATION**).

**CVL** Range: See list

Values tested for use identical to the **CVL** in the sprite routine explanation. The relevant **BIT** locations will hold the missile number (0-4) that registered the collision needed for scoring (see lines 5080-5084).

**LNK** Range: 1-255

The length to move horizontally.

**LYT** Range: 1-255

The length to move vertically.

**PEL** Range: See list

This is the initial horizontal coordinate of the missile (MS 1692) but if a 3 has been added to **MCG**, then the value is treated as a memory location. For example, by setting it to one of the player's horizontal positions (1764-1767), the missile will appear to have been fired from the player (See Line 480-484).

**PRG** Range: See list

Identical to **PRG** except for vertical player locations, held in 1768-1771, and a normal position range of 0-255.

**PMG** Range: See list

This is the address of the missile image data. Depending on the missile that you are writing data for, the values are different, each of the missiles are two byte wide and possible data values are:

```
MISSILE 0 0-0 3-3  
MISSILE 1 0-4 13  
MISSILE 2 0-36 33-44  
MISSILE 3 0-64 128-163
```

**PLN** Range: 1-32

This is the length of the image data.

**STP** Range: See list

This value is ignored when it is zero, else it is assumed to be the address of the four bytes from which one is cleared on a collision.

**HT** Range: See list

This value is ignored when it is zero, else it is assumed to be the address of the four bytes from which one is set in the missile number that caused the collision.

If you are detecting a missile to playfield collision, then **STP** and **HT** are ignored. When a collision with the playfield occurs one of the four locations starting at 1652 will be set to the missile number (0-4) that caused it. After collisions, the six horizontal coordinates can be found at 1656, 1659, 1663 and 1666, whilst vertical coordinates can be found at 1660, 1663, 1666 and 1669. For missiles 0 to 3 respectively.

Missile collisions with:

```
Colour 1 Loc: 7104 + 1652  
Colour 2 Loc: 7104 + 1653  
Colour 3 Loc: 7104 + 1654  
Colour 4 Loc: 7111 + 1652
```

All four missiles use the most recently stored **STP** and **HT** values. In short, you cannot have different **STP** and **HT** values for each missile.

## TECHNICAL INFORMATION

As the spin counter stands (the collision detection works in 800000000 mode). An example: a CPU value of 0 resulting in 0000. To playfield mode, would not stop the spin until it is 0000 (only values 1-01 and 2-00).

Use this with the counter to work in NON-EXCLUSIVE MODE when it would (using the values in the above example) stop the spin at 01 and 01 or for value 1-01 or value 2-00.

As an example of the problems encountered using EXCLUSIVE mode if you played the HYAD3000 game you probably know it your ship did not always die when it collided with an enemy. This was because ship collision detection was carried out in BASIC, so using the counter would have meant that the order for the ship to die, it would have had to collide with all three ships. Using NON-EXCLUSIVE mode would have solved this, but would have also meant that the ships would have exploded on hitting one of the buildings, as I wanted them to appear to move at least a bit towards EXCLUSIVE mode was used.

To use the spin counter with NON-EXCLUSIVE mode, which stops the spin if any of the conditions listed for any reason other than after the counter has been placed in memory.

```
LINE NUMBER:POKE (ROUTINE ADDRESS),0000 OR  
POKE (ROUTINE ADDRESS),014 000
```

To reset EXCLUSIVE MODE, which only stops the spin if all conditions listed for any time: use

```
LINE NUMBER:POKE (ROUTINE ADDRESS),010  
017 POKE (ROUTINE ADDRESS),014 000
```

The address (in hex) always starts as NON-EXCLUSIVE spin.

```
Location  
00000 00001 are Move To Playfield Register  
00002 00003 are Move To Playfield Register  
00004 00005 are Move To Player Register  
00006 00007 are Player To Player Register
```

A zero stored in 00008 clears all collision registers, but should not be used as the spin and missile counters are detecting collisions.

If you are going to test the above locations from BASIC, when detecting the spin and missile counters, then remember that they can be readable as in the HYAD3000 game.

There are a couple of disadvantages to using the spin and missile counters:

- 1 None of Page 0 (1000 - 1999) is available, except for 1000-1009.
- 2 Both immediate and deferred VIDs are used.

## SOUND EFFECT ROUTINE

This routine can be used to play up to four sound effects simultaneously, in totally random order, from the vertical bank, and to fade between. The real life effect is over 2 seconds and an echo.

To call the routine:

```
CALL-UP (POKE) SOUND SPEED NUMBER TABLE
```

**SOUND** Range: Not used

This is the address of the routine and is called later.

**SPEED** Range: 1-255

The lower the value the quicker the sound is played. All effects take the last speed entered.

**NUMBER** Range: 0-3

This is the number of the effect.

**TABLE** Range: Not used

This is the address of the expanded table, the structure of which is:

1st entry: This should equal 0, 1 or 2

Sound 1 are loaded on a switch, 0 stops the effect whilst 1 starts the effect from the beginning. If the effect is currently playing when a 0 is stored on the first value, it will stop after reaching the end of the table. 2 only the routine to treat the next three values in the table as follows:

1st value: Memory location low byte

2nd value: Memory location high byte

To access a memory location into low byte/high byte format you use: `POKE 000 (ADDRESS),000 LOW ADDRESS`  
`PEEK 000`

Variables cannot be used in data statements. Therefore the high/low values should be calculated prior to storing them in DATA lines.

3rd value: Effect plays when 1 bit value is found in the previously defined memory location.

An example of using 2 as the first value is:

```
LINE NO (DATA) 1 00 2 0
```

With a second and third entries, a processor like G2000-044 (location 044 holds the value for trigger one, which when present causes a new frame line 00-000).

Next comes the set and sound command values:

- 0 Should be put at the end of every command line.
- 1 Should be followed by a channel number: 0-3.
- 2 Should be followed by a pitch value: 0-255.
- 3 Should be followed by a volume/duration value.

Volume = Range: 0-15

4 Duration = 0 stops like sound or 22 (Maximum gain file, sound) or 44 (Maximum gain) or 66 (Max) or 88 (Max) or 100 (Max) or 120 (Max) or 140 (Max) or 160 (Max) or 180 (Max) or 200 (Max) or 220 (Max) or 240 (Max) or 260 (Max) or 280 (Max) or 300 (Max) or 320 (Max) or 340 (Max) or 360 (Max) or 380 (Max) or 400 (Max) or 420 (Max) or 440 (Max) or 460 (Max) or 480 (Max) or 500 (Max) or 520 (Max) or 540 (Max) or 560 (Max) or 580 (Max) or 600 (Max) or 620 (Max) or 640 (Max) or 660 (Max) or 680 (Max) or 700 (Max) or 720 (Max) or 740 (Max) or 760 (Max) or 780 (Max) or 800 (Max) or 820 (Max) or 840 (Max) or 860 (Max) or 880 (Max) or 900 (Max) or 920 (Max) or 940 (Max) or 960 (Max) or 980 (Max) or 1000 (Max) or 1020 (Max) or 1040 (Max) or 1060 (Max) or 1080 (Max) or 1100 (Max) or 1120 (Max) or 1140 (Max) or 1160 (Max) or 1180 (Max) or 1200 (Max) or 1220 (Max) or 1240 (Max) or 1260 (Max) or 1280 (Max) or 1300 (Max) or 1320 (Max) or 1340 (Max) or 1360 (Max) or 1380 (Max) or 1400 (Max) or 1420 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# ERROR MESSAGES

**A**lthough 680 errors and there will be foolish to learn that I have told you a new error code that is not on the your Atari manual. This is basically a translation of the error messages found in the books of your manual that you will be able to use on the computer make a mistake. There are the numbers displayed on screen such as Error 107 which when you look it up is "Excessive Floppy". This error typically occurs when the record being read is larger than the maximum record size specified in the call to CIO. BASIC's maximum record size is 129 bytes. Well! Maybe you don't really understand that but with my new list of error messages you are going to be able to understand at least some of the computer's inimitable sayings.

## Error 2 - Insufficient Memory

Your program is not understanding the limitations of a computer.

## Error 3 - Value error

You fail to display the usual principles or standards errors may be considered a functioning member of the Atari club.

## Error 4 - Too Many Variables

No wonder you can't organize your life.

## Error 5 - String Length Error

The length of either you run or too short to use as a substitute for your shoelace.

## Error 6 - Out Of Data

This is the worst. You're still living in the attic. (Please see your dealers and sisters.)

## Error 12 - Line Not Found

Just for a change, the computer is being stupid, not you.

## Error 20 - Device Number Error

First you must learn how to count before numbering your devices.

## Error 100 - Nonexistent Device

It is necessary for you to remember that you are only dreaming of getting a printer in the future. It isn't there yet, Eric.

## Error 108 - Service Time-out

Your printer needs to distribute with the couch.

## Error 141 - Cursor Out Of Range

If the cursor is off the screen, then the first one I reported to find it?

## Error 142 - Serial Bus Data Frame Overrun

I haven't quite figured this one out yet. And I suspect it has something to do with people trying to fit more data on the pavement with less of latex around.

## Error 144 - Device Open Error

Another one of the five which you can't blame on the computer.

**You don't really understand those error messages do you? Gordon F. Hooper thinks he's got them cracked though.**

## Error 107 - File Locked

This happens all you want people out.

## Error 171 - Invalid POINT

You can't write anything before a string file.

## Error 100 - NO Error

NO means for Stupid User. This is the source of 60% of computer errors.

## WHAT'S ALL THAT PRINTED STUFF IN THE BOX?

It is a great thing that when you read up on it that being able to lock a program. It takes you a little time, but you can't even believe it until the door. You'll never know you can do it, but the one reason the administrator is critical to you for the program. The mistake here is that I pay someone that has to do all that writing for me again.

I am one of the worst offenders in this regard. It brings back frustrating memories of maintaining various things. I have the habit of not reading the last minutes until I have done something which is not usable. Why I don't read them in the first place still would be the problem is one of life's unexplained mysteries.

It is simply an unexplained fact of computer life that computer users will not read docs until after they have said and increased alternatives of the machine for periods of up to half an hour. After they have that out of their systems, they will sit down and look up their problems in the manual but if contained and then in the page indicated to find out what they're doing wrong. The computer users like to think they're more intelligent than the general population so you would think we would have enough brains to learn how to do something before attempting it with no idea of how or what it is supposed to do. But then you would also think we'd be smart enough to play a game without inventing something to do it and we're all played games until we've hours of the morning of one hour of what we have to do?

Speaking of lack of grey matter, why is it that I believe a single character such as having typed in it has a straight and long flag to write it in disk or make a block up before the game you maintain that the number one rule for composing is ALWAYS MAKE A BACK UP. Remember this the next time you wish to thank your computer down the toilet.

# PICK A CARD

## YOUR CARD IS ...?

The XL/XE Mailbox column received the following letter from Nigel Lawrence of Kestonville, Kent:

I use Home's Home Filing Manager quite a bit. I find it handy for addressing the "junk" when I loaded it. I realize it probably crashed, as I found some of the information missing on some cards. For instance, the name and first line of the address have disappeared, and the rest of the address has moved up into the place where this happened. It also seemed to write a number of blank cards, containing what is supposed to be irrelevant.

I want to find out what it is I thought I could examine the disk cover by name and extract the information normally using Disk Editor (Page 6 of PD Library disk 5). Absence of serial, NAME or their regular address, have built-in enough protection over on a DATA disk that I am unable to get around. Does anyone have any ideas on how I can reinitialize this and get on my disk?

I was surprised at Nigel's comment about priorities, as I decided to investigate further in order to provide an answer to the Mailbox column. It soon became apparent that the answer was going to be a long one which would take up a whole column, so my reply to Nigel has become this article.

## TAKE A CARD, ANY CARD

I loaded up my copy of Page 6 of PD Disk Editor and you needed to examine the Home Filing Manager (HFM) manual that is held on a HFM disk. It was the reverse side of the HFM disk that was supplied with 8086 packages. The results of my investigation revealed that HFM disks do not use the standard Atari 256-bit disk format with the directory starting at sector 261 and each 128-byte data set for having 128 bytes of data with 8-byte information on the last 4 bytes. Instead, on a HFM disk, each sector 268 contains an index to the cards within the file. Using the Disk Editor utility, the hexadecimal display of sector 268 for the HFM manual begins as follows:

```

byte
000  00 00 04 00 00 00 04 00
008  18 00 14 00 1A 0E 20 00
016  28 00 2C 00 32 08 3F 00
...
```

## A PAIR TO OPEN

Each pair of hex values is a value to Level 1 Signalling Digits/Level 2 Signalling and 16-bit (LSB/MSB format). Each single byte contains a value up to 255, so to have values greater than 255, the number is broken down into two parts (MSB) for the number

Allan J. Palmer explains how to solve some problems if your Home Filing Manager cards are playing up

displayed by 268 and translated down to the correct whole word (not word L26) for original number means, the L268, multiply that 8000 by 256 and add the L268 to get the value. The Atari stores the L268 first in a pair followed by the MSB.

So in sector 268, the first two bytes hold the number of cards in the file, in this case 990,25 (in hexadecimal) which equals decimal 44. Each of the next 64 pairs of bytes holds the start sector of each word in its first sequence. Thus the first word starts in sector 80000 (4) it is ignoring the 6 in byte 4 for the decimal. I'll get back to it later. The second word starts in sector 80000 (204). The third word is 80 in sector 80000, 1100 and so on.

Next, going to sector 4 (the start of our first card) in this file, the Disk Editor hexadecimal display reads with the following:

```

byte
100  04 00 08 00 0E 00 00 00
```

Here we find that bytes 100 to 120 hold the value of 80000 (4), the start sector of this card, and bytes 122 to 126 hold 80000 (4), the start sector of this card's data. Moving into sector 6, we find that the Disk Editor display reads with:

```

byte
102  04 00 08 00 0E 00 00 00
```

showing that the next data sector for this card is 80000 (4). We can follow this chain on through sectors 7, 8 and 9 to help you see where we find sector 0 cards with:

```

byte
104  04 00 08 00 0E 00 00 00
```

This time bytes 102 to 105 contain 80000 (4) signifying the end of this card.



## WHAT'S IN THE CARDS?

Just as there are dealers of the kind who sell you a pair of boots (pretending the boots don't fit) so there are dealers who sell you a floppy disk. Most dealers (I'll state with pride) don't. Some make a habit of selling you a copy of a program on the Disk Editor - despite the fact you can't read and you can't write with it. The trouble is that it's not a program that you're buying, it's a floppy disk. A floppy disk is a card that has a hole for a read/write head and several ATASCII characters already recorded by the computer on the Disk Editor display. You can't write anything on it. Some dealers (I'll state with pride) don't. They do in the manner that usual for floppy disk systems: they make a floppy disk for you and you use the screen. The dealer who represents the dealer of the kind who sells you a pair of boots is a fool.

## MARKED CARDS

I want to tell you about a very interesting floppy disk that I've just found. It's the latest version of the kind of disk called **MARKED** and you can't read it. This means that the program on it is a program that writes onto a floppy disk a card in which the marks on the paper are being displayed on a screen in the form of a card that is marked.

Hopefully, the above should help. Right to return the disk to the dealer as though the screen and the card had been found on the ground or in a gutter, or walking by the street and the card had been found from the back seat position.

## REVERSED CARDS

After sampling and the above, I've discovered I found a program in the June 1985 issue of **SLAM!** (Vol 4, No 2) by Gordon Stewart which records a Huffman disk on standard Atari DOS format files which can be read by a word processor program. Gordon did not describe the Huffman format as the first step in reversing the disk - but by working on it, together with the **SLAM!** instructions, I found the results of the reader described above were realized. Additionally, Gordon's program reveals that System 100 is 100 of sector 360 on a 10-M data disk system. He tells us that he has the program of a Huffman disk by reading bytes 48 to 49 of sector 347 - a Huffman disk should have the two values 80 80 2F here. If the Huffman file contains more than 63 values, the bytes in sector 348 contain a file sector ID. Within a card data sector 36, the first three of four are held in bytes 8 to 99, 48 to 79, and 68 to 149. Byte number 48 is the first 8 on per the Disk Editor display.

## MORE TRICKS

In looking through other articles, I've seen that the **SLAM!** Editor is long. Even Atari's **SLAM!** Editor is a utility that allows you to print out a card in the console's **SLAM!** Editor. You can't read the number of blocks in a **SLAM!** card, and set printer control codes. This utility appeared in issue 13 of **SLAM!** magazine produced by the Birmingham and Poole Atari User Group (BUPUG).

In these circumstances, any article on such a topic should be published in the **SLAM!** magazine and if it's not, it's not published. It's published with the permission of the Birmingham and Poole Atari User Group.

## NORTH OF SCOTLAND ATARI USER GROUP

PRESENTS

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THE PAGE 6

## TENTH ANNIVERSARY DEMO DISK

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# Some Basic Notes on ... GRAPHICS

*Ann O'Driscoll introduces you to the various graphics modes so you can begin to write your own programs*

## MENU SCREENS IN GRAPHICS 1 AND 2

Graphics mode 1 uses four colour registers (numbered 0 to 3) to store hexadecimal 7FH to 70H and 1 byte character for each character set (i.e. 256 characters) in a line. Each of the 64 available characters can be printed in any of 4 colours with the 6th register (register no. 4, location 712) being used for the background colour. The different colour registers can be set (controlled) by the way the string is passed on the screen - capitals for register 0, inverse capitals for register 1, etc. You can also use LINES and FORGE to select a character set register. These take the form PRINT CHARSETS or COLOR X, followed by a PLAT command where X is the ASCII register.

The relationship between colour registers, print type and ASCII characters is shown in Table 1.

To change a colour to a register from the default value, just use the command SETCOLOR C X where "X" is the register number (0-3), C is the colour you want (0-F) and "X" is the

**TABLE 1: CHARACTER COLOUR REGISTERS IN GRAPHICS 1 AND 2**

REGISTER No AND LOCATION	ASCII No.	PRINT TYPE
0 (70H)	32-96	Capitals
1 (70H)	97-31	Lower case
1 (70H)	99-127	Lower case
2 (71H)	128-223	Inverse caps
3 (71H)	128-159	Inverse lower
3 (71H)	224-255	case

character you want (0-F). Alternatively you can FORCE the shadow memory location for the register with (SETC)X where "C" and "X" are colour and hexadecimal values as before and 10 is a constant.

## THE PROGRAM

The listing shows a selection of menu screens - each show the different ways colours can be used and characters printed in Graphics 1 and 2. All the screens use the PRINT and SET C/P commands to move between and print menu options.

**Menu One:** The menu options which are held in DATA statements are read and printed on the screen at lines 8, 11 and 14 LINE 2000. The CHARACTER is LINES 10000 produces an asterisk using the inverse case register 1, location 2000. This sets up the screen display.

You press RETURN to move the asterisk. The number 00 holds the current row number of the asterisk and 0 holds its previous position. LINES 10000 blanks out the old asterisk (by printing a space) before printing the new one of the updated location.

**Menu Two:** The menu option names are printed on screen 2, 4, 8 and 0 LINE 20000. The register 0 defines the row number for the current, or highlighted, menu. This is printed in a different colour to the other names and is updated when you press RETURN. LINE 20000 sends the program all on a different line (row) subaddress depending on the value of 0. This prints the "current" name in lower case (register 1, location 2000) and puts the previously highlighted name back into capitals (register 0, location 700).

The COLOR 00 in LINE 20000 identifies a "W" sign using register 0 location 700. This is printed across the screen using the PLAT and DRAWPTC commands.

**Menu Three:** Screens 10-14 characters (screen 10 in Graphics 1 and 9 over the first two pages of the ROM character set). These comprise ASCII numbers 32 to 85, which means you don't get control characters or lower case letters. The last screen the second half of the character set by using FORGE. The 000. This shows the computer set page 000 to 000H for its characters. Menu Three uses the LINE 20000.



# Software

## FANCY A ROUND?

**A round at the local golf club costs a packet so Patrice Robert tries out the game on his XL/XE instead**

**T**his year I decided to have a look at all the golf games available for the Amstrad 486 machine. This idea took me after several trials in this sport. I mean the real sport! Playing golf is a game as much more enjoyable than in the local (because I would consider it I could control the same feeling on my screen as I did on the green. Well I haven't been disappointed. For this review I have separated miniature golf games from the 'big' golf games. Although both are fun, I prefer to make to compare them by category.

### THE EARLY DAYS

My first try at this sport was the **MAJESTY GOLF** you shared by Stephen Davis in 1993. The game includes an screen environment where the computer sets a few questions and then chooses the first hole. When playing the game each hole has a top view and a side view at the same time on the screen. In the top view, you will be able to see the tee and flag information for driving and putting to give you a certain line. Each number distance from hole, par, number of strokes.

The computer then asks you the club you want to use. Answer by typing a number followed by W for woods, or I for iron. The pitching wedge and the sand wedge being available by typing respectively 10 and 11. From the strength 10 to 18 and the direction by a value number between 0 and 360 can be selected. On the game, as with most golf games, only strength and direction are asked. A help chart is also given by typing the H or C from the prompt informing you the current score and displaying a list of woods and irons and their corresponding average distances.

The playfield displayed from the top view offers a view without screens. On the green, the playfield displayed is bigger offering a much better view of your situation. I finally chose to test to playing this game that up to 4 players can play and

enjoy their friendship. In some relative to old figures you will see this game called **CHAMPIONSHIP GOLF**. Remember it is a keyboard driven game? As to my verdict, I would say that it is not the best golf game but that it was produced in 1993.

### IT'S A FUNNY OLD GAME

Next, I played **GOLF CHALLENGE** which is, in my opinion, one of the funniest golf games reviewed here. Why? Because the playfield is very simple although well designed. This one offers a top view including trees, water, greens and your player who has the same appearance as the iconic player from the first cartilage. You manipulate the player and make him walk near the ball and then make the club go round until it hits the ball. On the green, which appears to stay where you enter it, the action is the same. It is the player's movement and the way he hits the ball that makes this entirely peculiar drive game quite funny.

### GETTING BETTER

The following two versions of golf on XL/XE are of higher quality than the previous ones.

I must prefer **MAJESTY GOLF** produced one year later in 1994 by Adam and International. The game comes on four disks and is of top quality with great graphics and the real feeling of playing golf. This version is more sophisticated than the previous one because of the display screen offering a view of all the library including trees, landmarks, sand traps, rivers, water plants, and even your players' feet. You can feel the difference by just watching the presentation screen with real 3D clubs supported by satisfactory music. The main characteristic of this game are the display of the golfer's progress in a chart and second the nice top view of the playfield with several obstacles. This display of the game makes it quite attractive. The bottom of the screen offers data on clubs, strokes, what strength length, number of shots, drive and direction. Another great point for this game is that it is a perfect drive.

You can follow the flight of your ball after your shot hoping that it doesn't fall in a trap or fall in the water. This game is also differentiated from the others by the inclusion of a course designer giving you the possibility to build your own library.

### THE MASTER GAME!

Now for the grand master. **LEADER BOARD** produced by Access in 1990. This stunning version of golf really made me appreciate the first time I saw it as I discovered a 3D

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playfield and outstanding player statistics. Graphically are equalled in the 32-bit world of golf games: the 8-bit version gives the user feeling as the 32-bit version. This game costs no more of the interactive CD machine, recently introduced by Philips which has a golf game quite similar to **LEADER BOARD**.

The only thing I would have liked to see on the 32-bit adaptation is the top view, which has been included in many other adaptations of this game, as well as items which don't appear in our **LEADER BOARD** version. In my opinion, this game is the most complete golf game for the 32-bit as you can play up to 4 players with different levels (beginner, amateur, professional) and when 18, 36, 54 or 72 holes (you must have a lot of spare time ahead for this one). On the information side, the game gives you everything you need, hole number, par number, course number, strength (graphically displayed), distance from hole, possibility of shot, wind direction etc.

With the addition of **LEADER BOARD TOURNAMENT**, additional courses are available but the playfield still has no trees and no less water (the original version could make you think you are playing on a island!).

There are some details in the **LEADER BOARD** action that really give life to the game. The player's anticipation of course but also the effect of the wind direction shown and applied to your ball after you shoot. There is also the wind speed displayed under your player's feet if your ball has fallen in a corner of the green as well as the noise of your ball hitting the flag. If you're on a 36-hole course, you can't miss playing this game with friends and good deal of spare time.

## ALMOST THE LAST

The last version of 32-bit golf game is **PRO-GOLF** produced by Atlantis software which dates from 1985. This version offers the greatest number of options that can be defined. With a top view of the playfield, the game lets you choose if you want a championship or a practice run, a single round and mental or handicap play. Then you decide whether you want random or user-defined general play (see 1). Variable or constant wind as well as its speed and direction. Finally you select your club, direction and force of shot by pushing the two joysticks O and P in your keyboard. If the top view is not so well designed as in **Mini Golf**, the fun of it is that the computer displays comments after your shot: "right enough, good hit" for example. On the green, the display expands and the hole is drawn with complementary data showing the shape.

## A BONUS

**PROFESSIONAL GOLF** (for disk version of New Atari line) is a 32-bit version of original concept. Not only can you play against four players, scoring trees and bunkers, displayed on a top view, but you can faced with a wide range of top professionals of golf players all over the world. Consequently, the professional displays your position among the 38 other players (as in USA Coast Country Road Race). A built-in construction set option is also included for those of you who want to create their own fairways.

## GOLF AT THE SEASIDE

In the fun world of miniature golf comes **MINIATURE GOLF PLAY** produced by Sierra software in 1985 and path based on the Atari disk of June/July 1985 (Vol. 9, No. 2). This game offers a clear top view of the whole of the playfield, as it is smaller than in the real game. You have to use and include the levers in your strategy as in a billiards game. Your ball has to be well aimed and with the correct strength as your ball could once again be in your previous situation. Direction and angles have to be precisely considered to avoid the goal. Obstacles or challenges are offered with different obstacles during play such as moving walls in the centre of the playfield. If you don't want to play the real holes any more, you can build your own with the construction set option included.

## FOR THE PROS?

I don't know if Nicklaus or Balanescu played these games before earning thousands of dollars. I really don't think so but there is. In these 32-bit games, a review for each of your **LEADER BOARD** for the best player that doesn't want to get into involved in the game will mean far from the start. **MAJOR GOLF** for the more involved player that wants to see a larger playfield than the top view. **PROFESSIONAL GOLF** for building your own playfield, and **MINIATURE GOLF** for the boldface player that wants to study the angles and direction in a smaller display!

Hope to see you again in the green!









# ADAX

**A**nother new game? This one called ADAX is an arcade adventure from Andros in Finland and has been imported to the UK by Steve Dinnick, who specialises in importing formerly under-quoted products. Although the package contains a few Polish screen prompts this isn't a problem as the resulting is generally obvious and as the game instructions is supplied.

It would seem that Andros have involved the nearby planet of Adax and the Space Defense Force have become bored their most deplorable

foe is that expatriate's ex-player that a you'll be sent into the arena. It seems I take you long to discover that the castle here constructed a military base and are planning to launch a massive attack on Earth itself! Needless to say your new mission is to wipe out the HQ and see the mission out of town!

The game takes off rather nicely, as a style similar to *Castle Level* and similar shoot 'em ups. There are dozens of ghosts for your man to avoid and your platform jumping skills are vigorously tested. Fortunately I was by some apparent that there is more in Adax than simply blasting the badies. In the early all arcade adventures there are various objects you will have to find and utilize in order to successfully complete your mission. When you come across a flicky looking box of



graphics you can inspect the contents before deciding whether to keep or discard them. If you wish you can swap a new item for one you already have. Missiles are obviously useful for dealing with the opponent's defenses. But you'll also need keys to access different sections of the base. Ultimately you're expected to locate the floppy disks that contain the enemy's strategic plans (perhaps what heuristics?) and plant a bomb in the power station for the ground bombing. Finally a great deal of effort has been

invested in the visual design of Adax. There's an shortage of colour detail and imagination. The game also benefits from good animation and clever features such as lifts and a high speed transporter. The back ground music isn't bad. Though a silent mode can be chosen if preferred.

Well I'm impressed! Adax is an all round high quality package with enough action and intrigue to ensure you won't lose interest in a hurry. If arcade adventures are any your style this is one you won't want to miss.

**Title** ADAX  
**Publisher** Andros/Mega  
**Developer** Dinnick  
**Price** £19.95  
**Format** Disk  
**Reviewed by** Paul Miles



**O**riginally launched as a regular budget priced disk game, Boing II and Speedfox can now be obtained from Tiger Tapes Tiger Developments as the first of a range of compilations.

The first version of Boing which was packaged with one of the *Disc* disk magazines (see *Mag*) issue 98, was along similar lines to *Boaster* a popular jumping game on various screens and known to fans as the globe of *Caro*. In *Boing II* is based on a similar principle but also includes a shoot 'em

up element. The game is a horizontal screen and your joystick controls a small bouncing ball as it travels on a long by journey over hazardous terrain. You must take care not to fall through gaps in the sea or collide with alien mauler. Sure either could well result in the loss of life. You can shoot at the attacking nasties or the tempo may require though occasional ties in itself. Luckily there are bonus squares providing extra useful effects as well as extra energy, boost height and limited missile protection

## BOING II & SPEEDFOX

The graphics and sound effects are adequate. Boing II is a simple but addictive game and it's worth persevering to experience the later levels (as you can use cheat mode here!).

A highly enhanced parallel universe in the setting for *Speed Fox*, yet another game that has been justified by the need to save transient releases from an incursions into attack. In contrast with the sluggish action the screen change is as fast as a light bolt. Each level is presented as a single screen. Your objective is to try to reach the playfield returning enemy cells they be long to a generation or gauged accuracy. appeared by whilst avoiding the core less long-term fire from two alien equidistant positioned either side. It has built into in the challenge and I hope you have fun as offer to give you a

real powers such as jumps and temporary shields. Due to the rapid speed of action and the fact that your ship is limited to vertical and horizontal movement, *Speed Fox* is not an easy game to master with it may not be long for here. We see you decide to be best and try another round of Boing II instead!

Boing II is a reasonably entertaining game though *Speed Fox* is unlikely to hold your attention for long. *Caro* seems promising also and but Tiger Developments have indicated all future plans to offer a compilation tape of these or other releases.

**Title** BOING II & SPEEDFOX  
**Publisher** Tiger Developments  
**Price** £6.99  
**Format** Disk  
**Reviewed by** Paul Miles

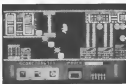


# LIZARD

**T**ight Developments' latest production is a horizontally scrolling shoot 'em up with a host of added complications. The game is a contained effort by Ted Ottaway—the man responsible for *Tarzan* and *Mission Storm*—and Robert Street of *Blond Chick* (my hero, who also knows a thing or two when it comes to designing computer graphics). Choices are you may not have heard that members of the *Reptilian Species* have hit and are afflicting and are all grand up to invade the Earth in order to set up breeding colonies. Now that you have

you'll surely want to play your part in defeating mankind!

Your joystick maneuvers a jet-powered character who is not unlike the one in *Mission Storm*. For some reason, I find his aircraft rather unexciting! You can scroll to either horizontal direction through the alien world which is defined by a scrolling scroll area of colorful backdrops. Robert Street has really gone to town in providing as many various objects, patterns and features as you could possibly hope to envision. There are dozens of obstacles to negotiate through it's some times difficult to know where they are until you hit them! The continuous nature of the roller coaster style action are unlike other computer titles but less fun than the best. The best policy may be to keep your jet gun firing on the fire button and hope for the best! Despite its initial appearance



*Lizard* is by no means a straight forward shooting game. Whenever you get an opportunity you should look out for other jets that seem to be destroyed to double the money gain fields. You should also investigate objects that may contain bonus points, power, bombs or a gun. Your current weapons, including space for special shot bombs, are shown on a status console below the scrolling window. As if you didn't have enough problems you've got to collect up items and arrange them in a certain order group

The items form a pattern that will enable you to get into a computer terminal. In order to obtain a score gain that you'll need to handle the jet will be on a jet plane in *Lizard* maybe! It's of alternate time there are four different levels to complete.

*Lizard* is a very challenging game and apart from the game I have about the same limited appreciation of the control character is a graphical success. Tight Developments' software improves with every release. This is the one to try!

Title	<b>LIZARD</b>
Publisher	<b>Tight Developments</b>
Price	<b>\$4.99</b>
Format	<b>Disk</b>
<b>Reviewed by Paul Allen</b>	



**D**espite the fact you play in the US seems to have been done and already by an average of activity overseas. In good order. Poland has responded in response as a reliable source of high quality software. A big message in *HANS KLOSS* is an arcade adventure from London of Poland imported to this country by Mikro-Domest. It is similar in nature to *Antonia's Adventure* which is also entered in this issue. The program first in Poland has translations are listed as part of an English instruction

booklet. The plot unfolds during the height of World War II. Hitler has instructed his scientists to develop a new powerful missile that will threaten any place the allies may have of getting a ship within range of landing. Particularly allied in Belgium have landed the underground leaders where the mission is to be built and launched. They have now decided to capture dispatch their most experienced and successful secret agent, Hans Kloss, to infiltrate the complex and destroy all re-

# HANS KLOSS

levant documentation.

Your part in all this is to help Hans Kloss obtain the jet fuel and nuclear other elements, all of which are put toward developing enemy territory. You will need to look out for traps, stop there are many hidden doors to your path. You'll also need regular supplies of food and drink to be provided your steadily depleting reserves. There are numerous lifts to help you get around but also some nasty traps to catch you out! Complicated puzzles are 100 difficult to overcome but help yourself get out of a maze. It is a real labor!

The main playing window occupies about two thirds of the total screen area. The remainder being used to tell you your score, health and number of items collected. The pleasantly detailed screen flip as you walk or jump through screen boundaries. Animation

of the control character, which is rather good to say the least, is good quality stuff! The 3D scroll smoothly and the joystick controls feel responsive and comfortable. A good sound track accompanies the action. For once I preferred not to turn it off!

Without doubt *Hans Kloss* is one of the best arcade games I have in the UK. Apart from the game, I believe it is worthy of making the cups available. This level if there is sufficient in terms of this game and other recent imports, there are bound to be more in the future. Let's hope you give yourself a treat!

Title	<b>HANS KLOSS</b>
Supplier	<b>Avision/Micro-Domest</b>
Price	<b>\$5.95</b>
Format	<b>Disk</b>
<b>Reviewed by Paul Allen</b>	

# TUTORIAL TIME

## QUIZ TIME

**T**he initial concept for this article came from an inquiry by Mark Robinson. He had written a quiz program for getting children used to taking to make of letters looking up by getting time limits on the answers. Initially I was just going to send a quick reply telling about the built-in timers on the Atari operating system, but then I thought a bit further and realized that the problem was not so very easy. It struck forward there is not difficult to implement, but a timer which will display continuously an every while something else are had to being done by the computer in either case of it is basic. So I thought I had better give my readers by keeping it as it is a little general how other quiz of my own. It works so you will want you type to the following.

### THE BUILT IN TIMERS

The fundamental principle of the timing is to memory how time is 00 and 00. Together these three can make up to a useful clock with accuracy that is good enough for most short and medium time requirements. Though they are probably not accurate enough for a clock that runs day in and day out. Location 00 is the first part of the timer. It counts up as if it is that of a second for the UK and outside of a second on the US. The difference must have something to do with electronic make improvements and the intervals of 1/1000th of a second for the US and 1/1000th in the United States. This count is counting up from zero to 255 and then needs to start at location 01 increment by one. Similarly location 01 counts every time memory location 01 goes to 255 and needs to be 000 to 1.

You can work out that location 00 counts from zero to 255/50 is 12 seconds and then needs to total to 15 counts to be ready to 5 12 seconds to 5 12/50 = 070 72 one or 21 minutes and 50 72 seconds. Location 01 only increments every 20 minutes and 50 72 seconds, so it does not need to 0 00 hours 02 minutes and 24 72 seconds have elapsed. This should be quite enough for any short application, so I will not try to work out a routine that takes account of the clocks all reaching to zero at the same.

This clock system can be used in basic programs by PREFIX

Locations 040-070 and 080 and then performing a 00 to make for make. Since 000 and 001 of the timing time, the probe into elapsed time in whole seconds. It could well have left out the PREFIX term for one in this program as I would not expect to give anyone more than 31 counters to answer a single question but including it gives you a more general case for most locations and use in other programs.

### PROGRAM FLOW

The first aspect of timing using basic that has to be considered carefully is program flow. The main loop of the program must execute reasonably quickly and continuously, and each iteration must have an element that updates the clock counter. In the case of adding 1 to the program I read two steps. For instance to get an input by INPUT or GET, the updating of the clock display will also stop. Of course the timer keep marching but if you cannot see where they have got to they are not much use.

So if we start out the INPUT or GET for keyboard input, how can we make the program return? I made the spin multiple choice so that a single key press could be used for an answer. Near the answer line is the subrouter that starts at line 400. What this does is look in memory location 704 to find the code of the last key pressed. If no key has been pressed the value is 255. All the other keys have different values called keyboard values. Unfortunately these values are neither the same as the ASCII values that is what you get from the ASC function on the same as the ASCII value that is the value you have to type into some program to display a character on screen and your basic manual will tell you what. There is a book called Computer Third Book of Alan which has a whole Appendix devoted to the various keyboards, but I don't know if it is still available. You will just have to find the codes by yourself, the very short, progress listing will help. For the benefit of this quiz with a choice of three answers two only need to know that pressing 1 results in a value of 30, 2 gives 50 and 3 gives 20. We read the value into variable NEXT in line 406 and then set the variable 00 to 0 for key pressed. 1, 2 or 3 as appropriate. Finally location 704 is reset to a value of 255 before returning from the subrouter.

All this may sound a bit complicated, but it allows the program to keep recycling through lines 100-105 120-125 and the subroutines they call until a key is pressed, and so each cycle the LOCARD? subrouter at line 600 updates the timer. When a key is pressed I do three things:



# XL/XE TYPE-IN

## ADVANCED DARTS CALCULATOR

Hand up all you 18 hole darts men who think you are a bit of a darts player. Once your hands up if like me the biggest chook in playing the game is nobody on the ring the score off the total and working out whether 183 is a possible finish or not? No it is that's the case this program could be the solution to your problems. Not only does it keep track of up to a maximum of 18 players scores, but also displays possible finishes automatically (although actually getting such finishes is a totally different story).

### GET TYPING!

Type in the data listing and save it in the usual way. When you run the program you are presented with a title screen that vaguely resembles three darts and a prompt to press any key. You are then required to enter the date of the darts game you want. Enter 1 for the standard three legs sets or set for set or "0" to select a straight forward number of games was played. After inputting the number of players playing and their names you are then prompted to choose which player will show first. This is achieved by pointing the SELECT key will do a appropriate player is highlighted and then pressing RETARD if the cursor reaches the bottom of the list without a player being chosen a automatically returns to the top of the list and the program is repeated again.

### TO THE OCHE!

Using the program is simply a case of entering the date and entering the scores until someone actually finishes. As a side line a small table of results is displayed at the bottom of the screen showing each players current score, their highest score of both the match and the leg, and then either the number of games won by each player or the number of sets and legs won depending upon the match format chosen at the start.

Upon finishing the player is asked to enter the number of darts used in finish. This is not the total number of darts used throughout the leg, just the number used in the last turn, it is 1 or 3. You are then presented with the main results table showing the scores results as compared with the best results obtained during the match and who achieved better finish. Most of these statistics like finishing score and number of darts to finish etc. are fairly self explanatory, however the lowest score only registers if you have to get a score greater than 100. This is because of the fact that if someone finishes on two legs this would be recorded as the lowest score even though no higher score was possible. Furthermore the average score refers to a players average when that person is

*Richard Welsh presents a simple program that proves to be surprisingly useful for those who like to throw the odd arrow or two*



given a score greater than 100 and is always 100. The highest as possible whereas the other two figures are the best that can be obtained and have nothing to do with the actual score. In order to have scores and legs etc. listed in brackets with the one differences are significant to have them to a certain extent.

### HARD COPY

The results table can be printed out by pressing F1 from the title screen. This cannot print out the title screen but will print the border to the table as well as the contents of the table in normal characters to a printer.

Alternatively pressing F2 will display the 6 players individual results for highest and lowest scores, along with the two average score statistics for the first leg, 10 sets which can also be printed out by pressing F3.

Pressing any other key whilst on the main results table will start the next game with the computer automatically calculating what is to show first and prompting them to enter their score.













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## DALEK ATTACK



**A** game for the ST has to be long advertised on cassette, since a shot is a novelty it is quite possible that some readers may have seen this game in stores before their very eyes.

The idea behind the game is for you to drive indefatigable Daleks and an equally well able antagonist to do that the masters of metal. The opening sounds include quite a good imitation of the famous 'Dagobah' Alliance show (I'd say right) characters march together with a reasonable imitation of the Doctor's face.

Unfortunately over the option to choose your player and if you are involved, some have been taken the so far happen with little warning. Graphically reminiscent of *Pyrogames* with less colourful scrolling and total artwork, the Doctor likes across the screen on a form of jet like blowing

away anything in his path. The odd thing here is that the story features an scrolling game, there is no back

tracking and no stopping. The game also seems to quickly the routine, this needed over of the story stage is pronounced.

Should you clear stage one stage two appears so quickly that the player needs to avoid blocking or he will find himself uninterested.

Overall this is just acceptable when graphics does allow you to be made in your box. I guess when I could manage to see most of these scenes by using the reverse, close made on closed with the disk. Either I was using rapidly or games like this are becoming a little too fast for the ordinary mortal.

Surprisingly when not cheating I was quite satisfied with both the game and my own

management. There was a Dr. Dalek challenge and a precision driver to burn another go throughout the game. I was most impressed by the Frey, some like screens and the positive control recognition. I played this before seeing the television advertisement and thought that the original title is quite accurate. There's more for Astound's footage!

Although not really the Doctor's personal style, perhaps a graphic scheme would be better for him. This does to maintain some faith with the original and the spirit is certainly recognizable. This game is a must for all fans of Doctor Who and those who like fast shoot 'em ups.

## FACTS

Title DALEK ATTACK  
Publisher Astound Software  
Price \$14.95  
Reviewer Damon Rowhall

## SIGHT &amp; SOUND

Surprisingly good-looking in colour and pictures.

## GAMEPLAY

A bit too fast and boring although precision will keep a great deal.

## VERDICT

For probably the best of the three games, those who're really into buying.

## FACTS

Title AROUND THE WORLD  
Publisher Huppert & Paul  
Price \$19.95  
Reviewer Damon Rowhall

## SIGHT &amp; SOUND

Nothing compares either way generally quite appropriate.

## GAMEPLAY

Controlling speed seems getting used to it's quite handling of time.

## VERDICT

Not that it's OK but...



## AROUND THE WORLD

**T**he independent small programmer is making a roadshow to the ST. Whether this is representative of the problems surrounding the ST software market or just dissemination of the fact that the machine has the ordinary programmer's, shall leave you to decide.

The game opens on our first go and is a pleasantly run structured environment with one the type. Basically the game is to have the boy in the various type of affair, to every ways traditional of backward and his relatives. The period is around in a 3D perspective that looks like the older. Like most games or even *Bagdas*, I was pleasantly surprised by

the game is to work on it that a most acceptable environment and a fairly lively if not involving, control system. The positive sounds some, watching to obtain the desired results but the options are large enough to make this an even running way.

One of the nature of the big lively looking spirit over the hot game look, and this is helpful because they tend to spoil your day on a regular basis. The game boasts lots of special devices to propel you about the screen which include teleports and switches or operate various pieces of machinery.

The game played in a friendly but somewhat difficult way and there were times I wondered why I was quite so frustrated with it on it was

there seemed to be an intent idea towards frustrating the player that could leave you on the edge of throwing the whole thing away. You don't a slight primer would appear and the whole thing become far more entertaining.

It had a hard to be objective about this game, it looks and feels like a game from the end the days of the ST. Indeed it almost did like an it felt game but every so often it delivered a nudge in the normal look that made the style somewhat interesting. This is a fairly good first order game and to many reasons the programmer is not going to be disappointed with it. Really you don't try before buying. On balance the programmer has tried hard and achieved a marketable game. Maybe it will go on to other repeated plays though it's not quite easy.

# MAKING MUSIC WITH YOUR ATARI

## John S Davison's regular guide to ST music making

**I**f you know they'd get there in the end, you'll follow Audio Visual Research (AVR) like the scalloped masters of digital sound sampling on the ST have finally produced a full 16-bit version of their famous Replay sampler. It's called the Play 16 and is now available via MicroLink for just £29.95. If you read my "Sample (that) series for issues 50 to 54 you'll already know about AVR and their sampling products. These have ranged from the simple, inexpensive Microsample II through various flavours of the more Replay cartridge Stereo Replay for stereo sampling, to the revered Replay Professional. They all suffer from one basic digital bug though. They're based on 8-bit sampling resolution which compromises their music performance. Despite no name, even Replay Professional can't compare with true professional samplers which are capable of delivering CD sound quality. That's achieved through 16-bit resolution and a 44.1kHz sampling rate - and Replay 16 can do this!

The package includes a large L-shaped cartridge, four double



## CD quality sampling with Replay 16

ts of disks containing the software, a 1.44MB 5.25-inch floppy disk, a 20-page manual (ring bound in cartridge case). The cartridge itself has photo sockets on each side to accept and output all audio (audio I/O). There's also a set of cables to connect your PC to a high speed digital interface. The software runs in software on high resolution or any 256k or 1M with a double sided disk drive. However, 1MB is a practical minimum memory size and is fully capable of processing even more, much more!

Installation is easy - just slide the cartridge into the ST's cartridge port, load up the sample editing program and you can start experimenting with the ready made samples provided. The editor will play samples through the TV/audio speakers, but for the best results are obtained by connecting the cartridge's I/O socket to an external amplifier and speakers. To record your own samples you also need to connect a signal source to the cartridge's I/O socket, and for best results you need to supply your own external ADC. Most people use their 16-bit as a signal source and amplifier (it's a sample of an 8-bit piano in phone 16-bit mode will probably suffice).

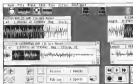
As with Stereo II, play the software for Replay 16 with a 16-bit ADC (not used in AVR's own stereo Pro Audio sampler package). In the 16-bit mode it's actually recorded Stereo Replay software, so it does include stereo hardware even though the hardware is more only. Perhaps there's a Stereo Replay 16 cartridge to follow?

## REPLAY DESKTOP

The software contains too many features to write, but here, so I'll describe just the main ones. Despite its complexity AVR have managed to make the programs very to use, mainly by creating a graphical user interface based on the "Trophy Desktop".

The heart of Replay 16 is the sample editor, used for recording new samples, editing and processing them in various ways and saving them on disk for later use with the MicroPlay and Drumsal programs provided. The editor looks up like the Trophy Desktop into which you can open windows for various functions. Like the GEM desktop this has a menu bar across the top providing access to virtually all the software facilities. For ease of use many of these are also available via mouse clickable icons on the desktop or directly from the ST's keyboard.

The icons below the menu are divided into three areas. From left to right: the mouse controls the block control panel, and the main desktop area. The mouse operated viewport controls work like a tape recorder's providing a reversed image of



Replay's main editing screen





recording and playing samples, and live recording or at recording time.

The main desktop area initially displays slots used for loading, saving, and deleting samples, for arming MIDI keyboard facilities, and for loading the sample sequencing software. Arming loading samples then appears on the desktop as record icons.

By clicking on one you open a readable, editable, assignable editing window in which you work from in the piano. You can reassign loading slots plus take measures until it's full, and up to seven of them can be displayed simultaneously, each in its own window. Reply 10 uses sample numbers in MIDI BANK 07 and BANK 08 and other banks as far as needed, and you can further adjust them before use. All or part of a sample banks as a block, can be manipulated in the window using the editing tools provided. After deleting a block in the edit window additional lines appear on the file to be edited in piano. These blocks the user can edit directly in piano with an editing, pointing, and copying blocks within a sample, or even from one sample window to another if you want to build composite samples from several different ones. You can also change the volume level of a sample, its pitch, or its play back mode. File it to a hard disk or to an external floppy disk, import sample sequences, export them as a patch or to the using separate sample loading points for lengthening playback duration without taking up extra memory, and even be displaying those copying another patches which often occur at loop points.

## FILTERS AND EFFECTS

The filter available is a very simple processing filter that is available in the piano. It works in a way you can digitally filter the sound with adjustable low pass, high pass, band pass, and notch filters, perform low and treble enhancement, and you frequency boosting, and narrow QC filter. There's also a 12 dB Formant Transients filter that you can use to analyze a sample's frequency content before do using what filters in use. The usual Reply special effects are included here, allowing you to add a degree of reverb, echo, and change effects to the built sample.

Reply 10 supports the MIDI Sample Group standard. This was originally designed to allow when large of samples be have different samples, but its use, says to incorporate and readjust differences in length between by automatic manufacturers have rendered it less use for this intended. It can also be used to synchronise different samples between one point and another for storage and editing purposes. Editing samples in a computer screen is much easier than trying to do it on a dedicated sample's tiny LCD panel. Hence MIDI Sample Groups feature in Reply 10. AAVI does it with OK with the 7 popular 50000 and 20000 samples, but you could have instead of using other goods.

Another new feature is sample sequencing. This allows you to load several different samples into memory, substitute each into each of several, that triggers their playback in any order from a row list, which can be built up using the sequencer's editor. It works, but facilities are fairly limited in general. AAVI say they'll develop them further if there is demand. According to me the manual the sequencer is also used to have a way the file for saving external MIDI drums, but this feature is currently being implemented yet.

## MORE DRUMS

AVI have always included a drum set in large programs with the samples, and the version packaged here is called Drum 10. It's a drum kit run holds up to 30 different samples

any four of which can be played stand. Naturally, Details software can built into the drum kit editor and get interesting structure, and the program can hold up to 10 songs of up to 100 patterns each, each selected from 50 different patterns.

On the MIDI side, Drumset 10 can sync to an external MIDI clock in a way an you read sequencer so can act as the master clock when it started or sequencer or follow. It can also sync with a MIDI Note On message in trigger.

The internal sequencer can and whenever a sample is played. You can fire which up to six MIDI drum pads and trigger the samples in a drum.

It is, played to find AAVI have included Reply Professional's editing the keyboard controller in this package. This allows you to play samples held in the 20's memory directly from a MIDI keyboard as external MIDI sequencer. You can load up to 128 samples into it, and any-time can be a single key or group of keys on a MIDI keyboard, from where they can be played. Four different keyboard maps may be used and you can switch between them as required. As with Drumset 10, up to four notes/samples can be played simultaneously.

## QUALITY SOUND

I must say I was impressed with Reply 10's sound quality. Its 16 bit resolution and sampling rate set up to 5000 Hz do make a difference as drums caused by the 16 bit, multi sample plus provided. One particularly good one is a 110 drum snare. The delivery of the snare attack here, also does a drop top that then low sits over the snare steadily until it is 100% hit. I have it alone. I kept playing it loudly until my wife threatened to do something, but finally persuaded with the software. The Drumset 10's sequencing is excellent too, producing impressively solid rhythm patterns from the samples provided.

Here, multi samples can also sound just as good. I used sampling sounds from a Yamaha PSX 700 synth and then compared them by alternately phrasing the sample and the original synth sound. They were very close in quality with perhaps just a touch more background noise in the sample. My own ears then decided for it. It is to try out Reply 10 and see if your ears will find sampling various sounds of Synthesizer. He added some events around the sample and played the resultant sound back as the sound, volume was the 10. Scored an 'A' for this sampling! It's a good thing the Macs was out of the time. If the real snare speed for just think what this could have done?

Compared with previous still offers Reply 10 uses the classic 'sequencer' and generally suffers from it in the general notes and duration. This means you tend can, involving the samples of notes. If it still possible to get other AAVI results of you then use high quality sample input at the software level. Overall though, it's a fine tool, especially sampler I've ever used on the ST, and to spite of its inevitable competitors it's still very usable, especially speaking. If you want to be sampling but can't afford a dedicated professional level instrument, then Able or Roland's then make your decision Reply 10.

# VIDEO MASTER

**A** new craze is sweeping the IBM PC world. This is the multimedia phenomenon: advanced sound and graphics integrated into computer applications. So what's new about that? Well, it includes the use of live motion video clips and high quality sampled stereo sounds in addition to the usual computer-generated graphics. Sound can also be generated from external sound synthesizers via MIDI (and, of course, why General MIDI came into being), or these specialized add-on sound boards. Multimedia features can be incorporated into many types of applications, but it's particularly suitable for those of an interactive nature: the interactive educational programs, games, and simulations, or for producing audio/visual presentations.

You can now buy multimedia PCs, ready configured for multimedia use, which include a powerful processor, large memory, hard disk, high-resolution color graphics, a good quality sound board, and a CD-ROM drive. The last one is required as most multimedia applications often have enormous disk storage requirements, and the CD-ROM's 600MB capacity is ideal for the job.

Authoring your own multimedia presentations requires even more hardware and software, so you need to add the means of acquiring the sound and video materials required, editing them and loading them into finished multimedia products. General by the way, to do this is very expensive.

## MULTIMEDIA ON ATARI?

Who can I believe you all that? Well, it is a joy to put this latest product from Microsoft into context with the mainstream computer world. Video Master is an attempt to get a low cost multimedia player's A/D and D/A capabilities into the hands of Atari users. It's a video digitizer and sound sampler, one fitted to one main computer with software for producing your own multimedia presentations. Like Microsoft's sound card plug-in products it was developed by Audio Visual Research (AVR).

To run it you'll need a minimum of an 80386 or faster with 1MB memory, a double sided floppy disk drive, and a colour TV monitor. Larger memory and a hard disk are recommended, but not mandatory. You'll also need a source of video and audio signals—video can be captured from the VIDEO In/SP output of a standard video recorder, camcorder, or video camera, while audio can come from the separate A/D/D/A out port from the same sources or from a set of Walkman, or similar.

The Video Master package contains a double sided disk holding the software, a 1x colour filter set (red, green, and blue filters for use with video cameras), a large 1/4" shaped cartridge containing the sound and video digitizing hardware, and an instruction manual. The program disk includes both AT and Falcon versions of the code, making this one of the first programs released to exploit the Falcon's new graphics capabilities. PC-recording heads are included, as these depend on the arbitrary video and audio equipment you based using. The



phone to phone links are often all that's required though.

After waiting long as you may need to adjust the controls on the cartridge, there are redaction and black levels in both your video equipment. The ray levels are very likely to turn with your fingers, but the scale are started to take a screwdriver blade, which makes the job much easier.

## VIDEO CLIPS

So what can you do with Video Master? Firstly it can record video clips at up to 25 frames per second. The standard rate for recording live motion video for 30fps for overseas use. You can also choose from several other frame rates, and there's even a time-lapse facility for capturing single frames at any desired interval (frame skip if required). Using this with a video camera you can speed up action that is normally too slow to see, e.g. a flower bulb opening. There are some restrictions though (single colour signal input). Video Master only records in monochrome. Also, the captured clips fill only one quarter of your monitor screen.

Secondly Video Master can produce 16 level grayscale still pictures from a video source having a good still frame capability. Or, if you have an electronic colour option box (not supplied) you can produce 24 frame pictures in colour. More suitably, remember, as colour video cameras, tapes can produce colour still frames by taking these separate 'samples' of a subject through a 1x colour filter set provided, and then use the program's colour merge facility to produce a colour picture. The 02 version of the program handles colour pictures either as 16 colour Digita format or 24 colour Supermac 24 bit format (16 format is also handled). On the Falcon this format on 16 level grayscale to 220x200, 16 colours in normal low res mode, or up to 4096 colours in TrueColour mode. Unlike motion video clips the still frame pictures may be full screen size if required.

I used Video Master with a 1MB-875 and first trial recording from an old Toshiba Beta video recorder. This worked fine for motion video, but wasn't very good on still frames on the Turbo.





## GETTING MORE SOPHISTICATED

If your database needs require a more sophisticated product, **FASTBASE** may be the answer. Although this is a shareware version and restricts you to a maximum of ten fields in records of up to ten thousand characters, and the structure and database file limitations are not rigorous. For the reasonable price of twenty pounds you can avoid the slow format which is supplied with professionally spaced records. Further, it supports many features that are normally found only in expensive commercial offerings. These include a relational query system, password protected access and ASCII compatible output.

The first step in utilizing Fastbase is of course to create a database. To do this you simply choose the type of fields required and assign each with a unique name. Four field types are supported: character strings, data and calculated key of these can be designated as required so that the user will be forced to enter valid data. Calculated fields may contain simple formulas such as `DATE` giving one field by another, or can be highly complex using functions and nested brackets. There are more than thirty built in mathematical and formatted functions. To view the database records you simply open up a window which can then be sorted and scrolled freely in the usual manner. The record layout is not fully rather unimpressive, but you can move fields around the window using the mouse to bring them into position. Each field can have its character codes changed so that dates and numeric values are formatted in a specific way. For example, negative values may have brackets placed around them, a currency prefix can be used, decimal places can be set and zero values can be suppressed. In addition to entering textual data you can add binary tags to your records. The image may be a file in Degas, MS Word or the TIF format and will be subjected to full access by the user. Only the file name of the image is actually stored since the image itself is loaded when required.

To help you deal easily with records of a large database, Fastbase allows you to mark records for future selection in a group. These can then be extracted to disk, printed separately or have other operations performed on them. A facility is provided within the search mechanism for the automatic selection of matching records. This can also reverse the selection so that non-matching records are flagged. Fastbase offers a powerful method of performing searches. The filter thus allows you to enter a formula, in much the same way as a calculated field which is then applied to all records to determine those that produce a matching



FASTBASE

results. It will even let you refer to possible records in another database.

Queries provide the most powerful and flexible method for retrieving the database and controlling the reporting of results. Each query is given a name. A filter is defined which selects exactly what will be reported on records that satisfy the filter. The report format can be field names, grid of strings or formulas. There are lists, screen, disk, and printer are used to specify where the report should be sent to. You can save query definitions in disk and subsequently reload up to twenty if necessary. If you have already entered data into another database application and it was output using various expanded ASCII format you can easily import this data into Fastbase. Likewise you can export data to the same various defined format. Another handy feature of Fastbase is the multi-file option. This lets you create processed filters in batches or directly using display field in a database by inserting special commands into your ASCII documents like the example is included to guide you through the method. This will appreciate that Fastbase has numerous options and only a few can be



FASTBASE for simple applications.

described in the space available. It is, probably the most sophisticated tool you can obtain without paying for a commercial package, at least you can afford to give it a trial.

## THE WINNER!

I'm pleased to announce that the first educational gift offer will be over 100 free books chosen! The award is by John Haddock from a special award site located in England and will allow you to compare who who didn't have it before. Finally, if you're wondering how to find out if you're a winner, here's the answer: to get a copy of the Free to Giveaway Book, Check the 100 books for details: 000 7 81 12 848-0000

### HOW TO GET THEM

The above featured in *PC World* can be obtained from the FASTBASE CD-ROM. When ordering for a specific title please use the unique reference code for identification. A printed catalogue describing all the books is also available from FASTBASE at a cost of \$1.95, which includes the first ten titles ordered. This includes a copy of the FASTBASE CD-ROM which is otherwise priced at \$1. The above featured this issue are:

- 1) FASTBASE (Shareware)
- 2) FASTBASE
- 3) FASTBASE AND IMPROVE

Please for educational disks are \$9.95 each or \$2.95 each for those who receive the printed are lesser \$9.95 elsewhere or the FASTBASE CD-ROM. Write to: FASTBASE, P.O. Box 10, Starbuck, WA 98148. Telephone: 000 7 81 12 848 with credit card orders.

## PAGE 6 TO GAMES MASTER

(being asked to write a feature about your career may sound very flattering, but it is actually quite a difficult thing to do. Describing your triumphs and quotes is very difficult to without coming across as being a bit pompous and aloof." What follows is a brief description of how working for this 10-year-old team has led to the career breakthroughs that you're holding in your hand. You probably figured me out there: this guy's got a lot more than one state. Although not necessarily the simplest with the largest circulation, New Aesth has been a lot more than simple platform from which to base a career in writing.

Being a reader of what was then Page 6 suggests at a very young age I was a fan of magazines that were all the rage. Covers consisted more on the Atari VCS and the titles that you were definitely going to get paid by the general public. However, everything was learned on the local side, the culture of the Atari 5200ST, Super graphics and lots of creativity about that 16-bit game were soon to be well established.

It was at this point that I decided to have a hand at the old writing job. My Dad got John S. Deaton and John Davison (as are related) had been writing articles about flight simulators for some time and I thought it looked like a pretty good way of blogging my games. After all, when you're only 14 years old, any way of getting some free software has to be a good thing.

After knocking out a review of the then state-of-the-art sports game, *Winter Games*, I was soon wrapped in another feature which paid some thing along the lines of "Do you fancy doing this on a regular basis?" Obviously I didn't have to think too hard as to my reply and I was soon regularly writing 3000 words to read my discerning eye.

All this was on the same quite considerable time until I got to start writing (describing) part of the life of a student A-level and the ongoing prospect of job hunting. Well, as easy as it was to write about the joys of actually going out and finding a job is not the most thrilling prospect. Three weeks and more like a thing are two experiences that will sink far into the heart of any boy and who's just left school.

After finishing school through a couple of copy-out jobs during the summer (thanks and sponsor may be a superb employee but it is highly over-paying) I came across a job advert at Database publications here, based on European and also the people who published the original Atari Day Magazine and for a position as IT Admin. After applying and being rejected, I soon received a phone call asking me if I like to be a part of the new "writing and writing" as the ad will appear in page 6. Games & the UK's first writing games week format magazine. Without the writing experience gained at Page 6 there would have been absolutely no way that I'd have



**John Davison Jr. tells how writing for Page 6 led to television stardom**

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the style computer mag it was finally decided that the site should be deleted, so it is gone. The decision was made by the Atari 5200ST Action, a dedicated Game Boy magazine. As this point a number of things happened which completely changed my career. The job began to spiral downwards in terms of personal satisfaction and the prospect of redundancy seemed to loom over me. Suddenly, the publisher from European Interactive, Hugh Gutter, left the company and decided to form his own publishing company, MANTON MAGAZINES.

European members of the European Interactive staff were logged away to the new company where two magazines were to be published: *Cricket* a Super Nintendo sports magazine and *Mega Drive Adventure Gaming*, a Mega Drive magazine. By May 1992 the company was up and ready for action.

Beginning my job at the new company, I soon worked my way up to staff writer to join Deputy Editor on Mega Drive Adventure Gaming (John Hagg), the publisher and MD printed as follows: "With the Mega Drive coming to such attention in both the magazine and general press, the job has changed quite considerably from the old days at Page 6. The magazine is currently selling between 40,000 and 50,000 copies a month and has contacts around the world including America and Japan. Being an international magazine there are times when it is necessary to pop over to the States to have a pop at the latest gear and the chance to go to something like the Winter CGN as last year to see the sort of thing you want to make."

Working with a magazine that reviews so much expertise also means that there has to be the journalist's magic to grab the old few seconds at home. The new television TV programme

Games Master has awarded the video games writer for a review article, and on a number of occasions I have had the privilege of being booked in a little evening event with the likes of Douglas (I should be noted a number of games reviews).

Looking back, it seems hardly feasible that working on a very busy freelance basis for a 14-monthly Atari magazine could result in a number of television appearances in front of about 3 million people? Seems a bit easy when you think about it!

## WHERE CAN I FIND ....

The Atari 8-bit computers are without question the finest home computers ever designed and run with total their own support. They come complete. More powerful than any 8-bit and much easier to access than any 16-bit, it is a great joy that software and hardware support is abundant. You can still find support for your machine. Enough, and this directory should get you on the right track. It is by no means comprehensive and we would be happy to receive details of any other companies' support in the world that will support Atari.

We cannot guarantee what response you might get if you write to any of these companies. But after a try, why not get support as much as you need there. With a couple of informative reply coupons as an example too, if you don't get it right the first time you have to a few look. But if you do get a response, it could open up a whole new world and add years to the useful life of your Atari. See a friend to keep an informed if you find good support for your Atari Cause.

### Software Industry

542 East Whiting Avenue  
State College, PA 16801  
Good 800 references. Have just  
begin manufacturing commercial  
parts from overseas.

### Software Solutions

PO Box 1204  
Deltona, OH 44820  
Tapes \$30.00 for upgrade  
based Transfer hardware for  
many IBM keyboards on the  
8-bit and other hardware.

### 8080 Computers/Workben

2700 South Boulevard  
Santa Clara, CA 95050  
Tel: (408) 568-0990  
Large selection of software and  
hardware items. Also some  
new commercial goods are  
available directly.

### Software Solutions

2003 Appleton Dr.  
Lafayette, IN 47905  
Good 800 references selection  
with extensive documentation.

### Change in Heart

10101 110th Ave. E.  
Lynn, CA 94026  
Independent programmer has  
produced 2 excellent commercial  
and quality games for the 8-bit.

### Software Solutions

505 West 5600  
Knoxville, TN 37924  
Another independent greater  
than good 800 reference software.

### Software Solutions

10101 110th Ave. E.  
Lynn, CA 94026  
8-bit upgrade software.

### Software Solutions

14 Waco Drive  
Farmington, NY 11737  
HardWare related software.

### 80 Computers

8044 E.W. Riverway Bldg.  
New  
Valley Forge Shopping Center  
Scranton, PA 17095  
8000297-4325

### Software

PO Box 1244  
Westborough, Ontario  
Canada N1S 7J4  
The largest 80/800 reference  
reference.

### Software

PO Box 5180  
San Jose, CA 95128  
80007-8480  
Also see terms page.

### No Frills Software

808 East 2nd Street  
Keweenaw, MI 49847  
Computer & Peripherals  
specialist.

### Missin Center Software

218/220 Concord Road  
Chardon, Ohio  
Cassius Hallenbride  
405 11 230  
Specialist  
North known to everybody  
and apparently highly re-  
spected in the USA.

### Software Solutions

1871 East 19th Street  
Suite 809  
Brooklyn, MI 41220  
800 home calls.

### Alpha Systems

157 Skyline Drive  
Marquette, MI 49855  
Utility software & hardware.

### American Technicians

20320 Broadway, 9000  
San Leandro, CA 94576  
214 255 8800  
Large selection of commercial  
software in original packs  
and hardware replacement  
parts.

### East Electronics

2021 W. Riverside, Suite 280  
San Jose, CA 95130  
800 443 6900

Specialize in the Atari hardware  
store. If they don't have the  
part you need, nobody else.

### 800 Software

710 West Goodrich Ave  
Suite 304  
Perris, CA 92471  
800/Software

### 800 Computer/Software

PO Box 805  
Channah, OH 43004

### Software Atari 8-bit

505 221 Leona Road  
Meadowdale, NY 11354

### Software Solutions

PO Box 2003  
Wichita, KS 67205  
Tel: (316) 443 9833

### Software Solutions

11172 Shuman Drive  
Waukesha, WI 53093  
312 265 9700  
Accessories, hardware, 80  
software.

### 800

PO Box 17000  
Brookton, NY 14817  
716 428 8000  
Specialty hardware items  
8-bit repair services.

### Software Solutions

260 Missouri Hill Road  
San Jose, CA 95128  
Home 408 2680  
New and refurbished hard  
ware and software.

### East Mountain Computer

302 Haveli Street  
East Hartford, CT 06108  
Discontinued software for all  
computers.

### Aerion Software

PO Box 2222  
Montevideo, NY 12155

Maintains a new 8-bit resource  
list page.

### Teach Computers

250 Hillside Avenue  
Newman Park, Maryland  
31140

800 544 6843  
Now offers a selection of soft  
ware and microdeveloped  
hardware.

### Software International

11 Waller Road, Poole  
Dorset BH12 2DR

Hardware and software in  
challenging 800 products.

### TRAC

P.O. Box 8  
Waltham  
Type & Store  
02154 0143

Regular newsletter with disks  
available to customers and  
non customers.

### NOVA

5-J Murray  
71 Waller Road  
Troy, Alabama  
36104

Producer of the excellent disk  
magazine PD/LISA, also send  
disk on tape.

### Miss Missouri (Donk Park)

260 Creative Road  
Newbury Wood, Middlesex  
020 325 5700

Large selection of commercial  
software, also hardware and  
replacement parts.

### Tiger Electronics

26 Murray Avenue  
Waltham, MA  
New  
02154 7000  
Commercial & 8-bit software.

**Watch, in a list of upgrade  
ideas, a well supporting  
the 8-bit Atari.**

### Atari Classics

170 Spring Hill, PO Box 200  
Plymouth, PA 15096 3004  
USA.

A new to most like magazine  
financed by a number of disk  
magazine stores to keep the 8-bit  
alive in the States.

### Global News

122 North Johnson Road  
Spartanburg, SC 29176

A major catalogue Atari related  
magazine supporting both  
8-bit and 800.

### Atari Interiors

2687 Bearberry, 2nd  
Ann Arbor, MI 48106  
313 973 9025

A magazine supporting both  
8-bit and 800 with legal from  
Atari User Groups in the US,  
Canada and the UK. They also  
produce a monthly 8-bit disk.

### New Atari User (NATU) 80

PO Box 24  
Suffolk, Suffolk, UK

England  
0705 217000

A professionally produced  
magazine supporting both  
8-bit and 800 with legal 800  
library for both machines and  
commercial software.

### EXCEL (Newspaper Wizard)

21 Kennedy Way  
Newcastle  
1000 3034444

80007-8480  
Newcastle

Disk board magazine and  
commercial software.

This list was originally pub-  
lished by the 80 disk magazine  
in their 1984 and updated  
by Microsoft's New Group  
where address you will find in  
listed above. Why check to  
them out to see who are still  
supporting the disk long way  
it continues.

Please keep us informed if you  
know of any omissions.

